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The Bath Pump-Room Competition.

THE unsatisfactory incidents in connection with this competition have excited more than usual interest in the exhibition of the drawings submitted, which are now publicly exhibited, and are being visited by a large number of the people of Bath. The number of the competitors is small for a competition which should have been particularly attractive to any architect who has the least spark of sentiment for his art. There were, however, only fourteen sets of drawings sent in, and of these only two are serious contributions from the architects of the City of Bath. Of these two, one is by Mr. T. B. Silcock, a clever designer, but a young practitioner, and the other by Mr. C. E. Davis, the City Surveyor. Of the five members of the Royal Institute who reside in Bath not one is a competitor. Why? Probably because they knew too much.

The absence of most of our regular competition architects is sufficiently accounted for by a perusal of the particulars. These give quite inadequate information as to the accommodation required and the purposes for which the additional buildings were intended. Then later on is inserted a very remarkable clause, "The above particulars are considered to be all that is requisite for competitors to be supplied with in order that they may compete, and no other information will be afforded under any pretext whatever."

There can be no doubt that the Corporation of the City of Bath, by permitting such particulars of competition to be issued, have debarred themselves from receiving so much of the talents of the profession as would have been obtained by a competition in which it was made clear that all competitors would receive fair treatment.

The Mineral Baths Committee should think themselves exceedingly fortunate that with so discreditable a competition they have nevertheless so able an architect as Mr. Brydon to receive their instructions.

The drawings submitted by the various competitors differ principally in the ideas of their authors as to the proper method of treating the Great Roman Bath. The problem to be solved was, briefly, the erection of a new Concert-room larger than the present Pump-room, but adjacent thereto, and the covering of the Great Roman Bath so as to fit it for a part of the museum under the Concert-room, and at the same time as a lounge in connexion with the Concert-room. There were also to be provided a ladies' parlour and five or six other public rooms, the sizes and purposes of which were no further explained in the precious particulars "considered to be all that is requisite."

In the design by Mr. J. M. Brydon, placed first by the assessor, the Concert-room is placed with its axis at right-angles (or practically so) with the axis of the Great Roman Bath, thus admitting of ample entrances and exits both from Abbey-yard and York-street, as well as from the Great Roman Bath. A wide corridor on one flank of the Concert-room, an entrance-hall on the other, and the principal entrance and staircase in front, with a terrace to the Great Roman Bath at the back, are the means by which this amplitude of access is obtained. Mr. Brydon has evidently taken the view that the five or six other public rooms were not intended to be of large size, and were to be distinctly separated from the Concert-room, and starting from this point has had no difficulty in producing a good plan on a site which other competitors clearly felt to be cramped. In his treatment of the Great Roman Bath, Mr. Brydon has put a segmental barrel vault over the piscina, carried by Doric columns standing on the existing remains of rectangular piers, and lighted by lunettes. The Concert-room has a flat segmental dome over its centre, with a semi-dome abutting at each end, the orchestra gallery being in a segmental recess from one of the longer sides, as in some Continental examples, and with an entrance below through a circular hall, which is cleverly arranged. Mr. Brydon's design would produce a Concert-room very charming in effect, but in which probably band music alone would have any chance of being adequately heard. In exterior treatment the design has, of course, been much fettered by the proximity of the present Pump-room, and it is sufficient to say that the design is quiet and sober, and well harmonises with the existing building. In the exterior treatment of the Roman Bath, Mr. Brydon's design is severe almost to plainness—a logical and defensible treatment, but "caviare to the general."

In the design marked "O" it is generally recognised that the drawings have been submitted, though not necessarily prepared, by Mr. C. E. Davis, the City Surveyor. The plans show extensively the adjoining baths and other adjuncts, with a completeness which only the information in possession of that official could render possible. The knowledge that existing buildings closely abutting on the site are to be removed also gave him a superior advantage over other competitors. In this design the Concert-room is placed contiguous and parallel to the Great Roman Bath—in which is inserted a gallery all round, on the Concert-room level. The Great Roman Bath has a semi-circular barrel roof, carried on Doric columns, as shown on the sections, though these are omitted on the perspective, which therefore at first sight gives the impression that the Roman work is little interfered with. The architectural features of the design as a whole are somewhat curious, as it is evidently intended to lead from the severity of the Pump-room to the ornate treatment of the Queen's Baths, erected from Mr. Davis's designs. The Roman Bath is therefore dressed up in the small and elaborate detail of the remainder of the York-street front of the Queen's Baths, while the new Concert-room has semi-circular headed windows on one side to accord with the Pump-room, and square-headed on the other, with quite a different style of detail.

The third premiated design, by Messrs. Baggallay and Bristowe, in many respects is on similar lines, as far as plan is concerned, to the second premiated design "O." It was an error of judgment to make the staircase to the public rooms on the first floor so very important, although "a good staircase" was asked for. The public rooms are ample, and the entrances well managed, though not equal to those in Mr. Brydon's design. The Roman Bath is a skilful "restoration" in the French student's sense of the term, and certainly a fine interior, but more costly than the circumstances will allow. Externally it is plain and unadorned, the designers being clearly unaware that the adjacent houses were to be removed. The design of the Concert room and its adjuncts is in exterior treatment one of the best

attempts made to form a pleasing elevation with the Pump-room as a part and the key-note. The interior has a very flat segmental-domed ceiling over the centre, with elliptical arches completing the parallelogram, and in its detail thoroughly continues the tradition of Bath in its palmiest days.

After the three premiated designs, that by Mr. T. B. Silcock is entitled to a high place. Unfortunately, Mr. Silcock, although a local architect, appears to have misconceived the purpose of the proposed extension. His Concert-room would make an admirable ball-room, with the public rooms used in conjunction, but reasoning in the light of the premiated designs, the public rooms should not be entirely open to the Concert-room, nor should the galleries of this be only accessible through the public rooms, or "salons" as they are called by Mr. Silcock. The author places his Concert-room, as in the first premiated design, at right-angles to the Roman Bath, and treats it in a logical way with a two-story arrangement of Doric and Ionic orders divided by the gallery which runs all round, utilised at the one end for the orchestra. This is a sensible arrangement, and though somewhat lacking in dignity, is well carried out. The Roman Bath is simply treated, the old work being undisturbed, but the roofing, as suggested, would be a difficult problem, and would necessitate more elaborate and more expensive ironwork than is even hinted at in the drawings. A girder 80 ft. span is not a light matter to construct, and the author does not appear to have fully grasped the difficulties of his problem in this respect. Setting aside the weaknesses we have noted, although it must be admitted they are crucial, Mr. Silcock's design is entitled to very high honour. The exterior, with its central tower of modest but sufficient dimensions, is one of the best, if not quite the best, in the competition; the planning, apart from the mistaken point of view, is good; the interior treatment of both the Bath and the Concert-room suitable and pleasing; whilst the draughtsmanship, especially of the perspectives, is inferior to none, if, indeed, it be not superior to all.

The remainder of the designs fall a long way below those already mentioned. Those marked D and G are the productions of gentlemen who may be commended for their pluck, and who may hope in ten or twenty years time to be within measurable distance of a premium if they work hard and learn to draw. Messrs. Malcolm Stark, & Rowntree are put out of court by the resemblance to a railway station which their iron roof spanning the whole of the Roman Bath suggests. They have hardly caught the spirit of old Bath in the additions to the existing Pump-room, with its peculiar character. Messrs. Lawson & Donkin have transgressed the conditions by a perspective which cannot be said to be "in monotone or etched," a fact which we gathered spoilt the chances of a good plan. The circular angle introduced at the nearest point to the Abbey is almost an insult to that venerable building, and an unfortunate feature, out of harmony with the rest of the design. Mr. J. B. Peverelle's design has the merit of leaving the Roman remains as little undisturbed as possible, but the triple span shed roof is too station-like in character. Mr. J. C. Carter's plan has considerable merit, but here again the station roof spoils the design, which, indeed, is, in the main, out of harmony with the existing Pump-room. Mr. C. A. Nicholson's design has no very great fault, but is below the average of the best. Messrs. Burgess & Oliver's design has many points of merit, but is defective as to plan in entrances and exits. The Roman Bath is enclosed in a distinct building, with a hemispherical glass dome, and the treatment generally is quiet and suitable. Mr. F. Todd's scheme is marred by the iron and glass conservatory, with circular iron staircases, with which he proposes to enclose the Roman Bath. Mr. F. B. Bond has produced a good plan with modest treatment of the Roman Bath, building on the old piles, but the detail of the Concert-room needs more study, and the design generally is ungrammatical except where features of the existing building are reproduced.

NOTES.

WE have received at different times during the last few months announcements from patentees and manufacturers connected with building work, that they have been awarded a medal at the Chicago Exhibition, and requesting a notice of the fact in our columns. For a long time past we have felt obliged to make it a rule that we can only publish official lists of awards of this kind; partly because the publication of a few such awards, on a private notice of them, is rather an injustice to other recipients who may not care to announce to us their own honours, partly because we regret to say that in more than one instance we have been misled by false or inaccurate statements from people who professed to have actually received awards which they had only, in fact, thought themselves entitled to. But the official list of awards at Chicago it seems impossible to obtain in any complete or authorised form. No list of awards has yet been issued, and it seems quite uncertain when one will be; so we learn from a circular from Sir Henry Wood, who acted as the representative of this country at the Exhibition. Only some general and unofficial information has been received as to the number and names of the awards in some departments; in fact, the whole thing seems to have been hopelessly mismanaged. Whenever (if ever) we can procure a complete and authenticated list of the awards, we will publish a selection from it, giving all the awards for exhibits which fall within the scope of this journal. But we very much doubt whether such a list ever will be obtainable.

IN conferring a baronetcy on Sir E. Burne-Jones the Government has done credit to itself, although a title of this kind clashes rather oddly in the mind with the associations generally connected with the works of this artist. However, as we have no "Legion of Honour" in England, this kind of addition is the only official way in which the Government of the country can mark its appreciation of artistic genius, and we may be glad to find that there is an increasing tendency to recognise the claim of eminent artists to any such mark of esteem as the State is able to confer on them.

IN the last issue of the *Classical Review* (double number, January-February) appears a brief report of the work done last year by the British school near Kyparissia. The site of Basilis (mentioned by Pausanias, viii., 29) has been identified, and *probably* that of the neighbouring Bathos—about 10 stadia away. At Bathos every third year rites were celebrated to the "Great Goddesses." On the site supposed to be Bathos about seventy terra-cottas have been found, many of local fabric, and the earlier specimens of rude archaic style; among the latter specimens the most frequent type is that of a standing figure holding some object to the breast. A few bronzes were found—a bull, a jug, the handle of a vessel decorated with reliefs, and two engraved rings representing a youth and a female figure, all earlier than the fourth century B.C. On the second site, which is held to be the road leading to the Acropolis at Basilis, were found an interesting series of bases of statues, these bases being ornamented with an elaborate key-pattern, and dating not later than the sixth century B.C. It is to finds of this peculiar character, and especially to terra-cotta used in votive offerings, that we must look for light on the many obscure local cults which form the basis of the ultimate Olympian religion. The same number gives a report of the recent acquisition of the National Museum at Athens, among which are conspicuous a series of lekythor from Eretra, and a pyxis with the scene (hitherto unrepresented) of the birth of Apollo and Artemis in the presence of other deities.

A CORRESPONDENT informs us of a rather curious case which has recently come under his notice. A specification provided that the mortar used on certain works should consist of one-third "blue lias lime" and two-thirds of a certain (usual) quality of sand. The sub-committee having charge of the works entertained doubts as to the quality of the mortar, and lost confidence in the clerk of the works. They directed the architect to have an analysis made, and when the analyst's report came before them a most alarmingly small percentage of "lime" was recorded. It was, however, pointed out by a member of the committee that the analyst had almost certainly reported the percentage of "calcium oxide," which is, of course, only one of the constituents of "blue lias lime" (which constituent it contains in a much less proportion than many other limes) and that, therefore, though the mortar might be deficient in lime, yet it could not be as bad as would appear from the analysis. On the matter being brought before the contractor, he pointed out a further source of error, namely, that the percentage of constituents given by the analyst was, of course, by weight, while the specification, equally of course, dealt only with measure. Modifying the results of the analysis by these lights, very different figures were obtained, though the proportion of lime was still below the mark. In the result an expert pronounced favourably on the quality of the mortar; the work was allowed to stand, and the mortar has, so far, justified the decision.

THE Report for the past year of the Surveyor to the Fulham Vestry (Mr. Norrington) shows that a good deal of difficulty is being experienced in the district from smells from the sewer gratings, and the Surveyor recommends upright ventilating shafts with cowls wherever it is possible to have these erected. He also adds the recommendation that before new streets are apportioned a special examination be made of the sewer, and that any improvements which can be made in the ventilation be made before the street is taken over. At the conclusion of this portion of the Report he also strongly recommends that continued efforts be made to induce the London County Council "to increase the necessary pumping power, or otherwise to facilitate the discharge of the sewage of the district, also to increase the ventilation, or by other means to improve the condition of their sewers in this district." The report contains some useful information as to the advantages and disadvantages of different kinds of wood-block pavement. The deal block paving in the Fulham-road, laid in 1885, has given out very badly, and the Surveyor advised the Vestry to have it relaid at once. We do not know whether it should quite be expected that ordinary deal block paving should last longer than that, under a large traffic. Experiments have been made with Karri and Jarrah wood. Strips of the two woods were laid side by side in the King's-road in July, 1888, and after these blocks had been down four-and-a-half years without being disturbed, the Surveyor of the Chelsea district reported that the Karri surface was a $\frac{1}{4}$ in. above the Jarrah, and the Jarrah $\frac{3}{4}$ in. above the yellow deal. The Karri wood, it appears, is also slightly cheaper than the Jarrah. Probably the extreme hardness which makes it specially suitable for paving-blocks renders it unsuitable for some other classes of work. One objection raised to the hard wood blocks is that they are more slippery than deal, on which the Surveyor comments that as it is admitted they are

cleaner, and slipperiness is generally the result of dirt, proper scavenging should obviate the complaint.

IN reference to our "Note," page 49 *ante*, condemning the adoption of the penny-in-the-slot system for opening the doors of the w.c's. in the new conveniences near the Marble Arch, the Surveyor to the Vestry, Mr. Livingstone, writes to us to say that there was no intention of leaving this as the only method of access to the closets, and that attendants are always in charge who can, if necessary, open all the doors with their key, independent of the "slot" mechanism, which was only introduced as a means of checking the amount of money received. It seems a rather illogical arrangement to do this by a system which can hardly be made compulsory; but of course the Surveyor's explanation quite alters the case. We were under the impression that the "slot" system was introduced, as some railway companies introduced it, to save the necessity for continuous attendance; otherwise we should not have made the strong objection which we did to its adoption.

THE Report to the Local Government Board by Dr. Wheaton on the causes of an outbreak of enteric fever in the town of Atherstone states that the outbreak was regarded locally as due to emanations from the privy-middens, many of which are undoubtedly in a very filthy condition; accumulations of filth in them are very common, and they are usually sunk below the ground level and are uncemented; their contents are often almost liquid, owing to the custom of throwing slops into them, or owing to their being uncovered and receiving rain water from the roofs of houses around them. The hopper closets are directly connected with the sewers, and in many instances are in a filthy condition, being entirely devoid of any apparatus for flushing them. In spite of the above defects it was found that the disease was not present in the greatest intensity in places where excremental nuisance was especially marked; many cases indeed occurred in households where the method of excrement disposal was not in any way defective. Attention was then turned towards the water-supply (one or two other possible sources of disease having been examined and dismissed), and after long examination it was concluded that the illness was connected with the use of a portion of the water-supply consisting of the water collected from a piece of common land about 80 acres in extent, known as "The Outwoods." This led to an examination into the causes which might have rendered "the Outwoods" water-supply unwholesome, with the following result, which is of some interest as showing the roundabout ways in which water-supply may be injuriously affected:—

"The long period of drought in the spring, caused, I was informed, the soil of the Outwoods to become cracked with numerous fissures. On May 17, three days before the water was turned into the town mains, there was a heavy fall of rain, amounting to 1·24 in.; as will be seen from the chart of rainfall appended. A few days after this fall of rain, the Outwoods water was noticed to be brown and turbid, which was attributed to the manure from the cattle grazing in the Outwoods having been washed into the field pipes, owing to the cracked condition of the surface of the ground. The water drawn off from the town mains within the epidemic area in the morning after the commencement of the turning in of Outwoods water on May 20 was also turbid, and I was informed that it actually stank after it had been standing a few hours. On June 9, the Medical Officer of Health took a sample of the water from the Fitters Monument; it was muddy, of a brownish colour, and after standing deposited a brownish-yellow sediment. On examining this sediment I found that it consisted chiefly of decaying vegetable matter. From time to time there were complaints of the turbidity of the water drawn from the town mains in the morning. After a further period of drought another heavy fall of rain occurred on July 11 of 1·06 inches; with the result that the water became turbid again, and on July 15 the turning in of Outwoods water into the town-mains was in consequence given up. On August 2, owing to there having arisen suspicion of relation of the fever to this water-supply, a specimen was drawn from the Fitters Monument tap, and sent to A. Bostock Hill, Esq., the county analyst. No definite evidence was forthcoming as a result of the chemical analysis of the water tending to show that it was implicated in the origin of the fever, but it may be mentioned here that he described the water as rather turbid, containing some brownish suspended matter.

There can, therefore, be little doubt that a quantity of organic matter was washed into the Outwoods water on two separate occasions; and it is most probable that the infective material of enteric fever was washed into the water at the same time. What was the origin of such infecting material, whether the poison was contained in the filth removed from the pond, and spread upon the ground, or whether it was due to actual fœcal matter having been washed into the tank or collecting pipes, it is now impossible to say."

THE Royal Botanical Society, which has applied to the Treasury for an annual grant in aid, was founded in 1838. It obtained from the Commissioners of Woods and Forests a lease of a plot of ground about eighteen acres in extent, which was at the time tenanted and in part planted by Jenkins, a nurseryman. It had previously been chosen, upon the laying out of Regent's Park, for the site of a vast monument to commemorate the battle of Waterloo; by another scheme a royal palace was to have been built there. The gardens were laid out by the late Robert Marnock (who had been designer and curator of the similar gardens at Sheffield), in conjunction with Decimus Burton who designed the big conservatory. It is stated that the society's aggregate expenses amount to about 6,000*l.* per annum; it pays a high rent; and during the last fifty years has spent a large sum of money, including 54,000*l.* for prizes in exhibitions.

THE commencement of an article in the *Fortnightly Review* by Professor Goldwin Smith, on "Oxford Revisited," is an amusing example of that confident ignorance with which architectural subjects are treated by writers who have never paid any attention to them, but who seem to think (with the editors of the Reviews in which they write) that the fact of knowing something else gives them a right to dogmatise about architecture. Professor Goldwin Smith begins his article by complaining of the dilapidation of some of the buildings. "For the second time in my memory the spire of St. Mary's is being restored. It seems not to matter what stone is used." If he had inquired where he could have got correct information, he would have learned that the decay of St. Mary's spire was specially due to the use of bad stone at the previous restoration, and that in the present work the greatest care has been exercised to procure a sound and durable stone. The next sentence is still better. "Pugin's gateway at Magdalen was of Cannes stone (*sic*), yet it was crumbling, I am told, before it was pulled down." Here the Professor has evidently been pumping someone verbally about the stone, has mistaken the word "Caen" for "Cannes," and is not aware that Caen is a by no means durable building stone—a fact which destroys all the point indicated by his "yet."

THE ADVANCEMENT OF ARCHITECTURE.

ROYAL ACADEMY LECTURES BY PROFESSOR AITCHISON, A.R.A.—LECTURE II.

THE boast of architecture is that it does not merely give the appearance of persons, things, or the face of Nature; but that it is an attempt to emulate the higher natural organisms, in the making of a shell for man's use or habitation. To emulate Nature's organisms, each building must be exactly fitted to its uses, but I will not at present consider those that are solely for material needs. Those for man's habitation must not only be fitted to his material wants and occupations, but to his mental proclivities, and to the natural grouping of the usual occupants; but even this is not enough, for it must also be arranged for the groupings of those occasionally meeting there. A few buildings are for the ordered groupings of many, under a law or a ritual, such as churches, chapels, and meeting-houses, and particular parts of many other buildings, such as the reception-rooms of Royal palaces for *levées* and drawing-rooms, the council-chambers of civic corporations, where, besides the ordinary debates, deputations are received and honours conferred. Buildings of a similar character form a descending series from the great and time-honoured Corporation of London to the smallest vestry-hall of the suburbs. The Courts of Civil Law afford another instance. This age, however, is peculiarly inimical to anything symbolic. For various effects, organised groupings, or grand processions, we have to go to the playhouse.

There are other buildings for the grouping of numbers, who, when swayed by strong emotions, group themselves in different fashions. In these piping times of peace, very little strong emotion is shown, except perhaps in those halls so expressively called the "halls of wasted footsteps," where unhappy suitors congregate.

It may be taken for granted that if the requirements are accurately carried out, each building would roughly express externally the uses to which it is devoted. It would not do so to the unobservant or the unreflective, unless it were adorned with figure-sculpture illustrating its use; but its shape, its doorway, and its windowing must to some extent explain its use, and at any rate it would have a marked character of its own. In addition to this every building should be so arranged that its outside may give some degree of pleasure to the beholder. We have seen that the reason for this is to compensate the surrounding inhabitants and the beholder for the light and air they have been deprived of, and for the instruction and pleasure they would have gained from the prospect.

In the case of buildings wholly erected for emotional purposes, the architecture should if possible raise the right emotions, or at least those of a cognate character. In buildings of a mixed character, only those parts which are devoted to emotional use. In a house, for instance, we do not have any high emotions raised by the coal-cellar, the knife and shoe room, the scullery, or the larder; and if, as it is described in old plans, the dining-room were a mere eating-room, you would not have any of the higher emotions associated with it; but the dining-room is now as much connected wtth intellectual conversation, with fruit, flowers, handsome furniture and beautiful pictures, as with eating and drinking. In it the refreshment of the mind should be as much cared for as that of the body.

Coal, wine, beer, and spirit stores, warehouses that only protect goods from plunder and the weather, are of the purely unemotional sort, while most workshops and offices are a degree higher, for they house beings generally more intelligent, and who are engaged on higher work, than mere motion and muscular exertion. Offices where the heads control the supply of necessaries to large sections of mankind, or arrange for the relieving the people from the incidental evils of life, should express more importance and dignity. Workhouses have hitherto been, æsthetically, very unfairly treated, for from the benevolent point of view, there is something much higher in rescuing those from misery and premature death, who have been impoverished by no fault of their own, than in protecting raw material from wet and robbery. If workhouses be mainly filled with the lazy and the worthless, that is purely a fault in their management; and they certainly have helped to protect the country from revolution. Such buildings should bear their proper stamp, and not be confounded with those for the stowage of goods. Hospitals are equally benevolent institutions, for they aid the sufferers from accident or disease, and restore many to their occupations; and, in the case of fever hospitals, greatly lessen the chances of contagion or infection among the healthy. Markets must at least be divided into three classes: the highest, calling for the greatest care, attention, and effect, are those where plants, flowers, and fruit are sold; for these beautiful things appeal to our sensibility by their form and colour, and sometimes by their perfume. The middle class require mere sightliness, and are those where common necessaries, such as grain and roots, butter and cheese are sold, that do not appeal to the eye by their shape or colour, and often offend the sense of smell, too, particularly in the case of garlic, onions, and cheese; while the lowest class comprises the shambles, where flesh is sold to keep up our ferocity, and to pander to our depraved tastes, and give us gout and rheumatism.

There was a decency about the ancients in this matter which we have discarded; they at least professed that their hecatombs were slaughtered to please the gods; we must not forget that the world which was conquered by the Romans was conquered on wheat-meal porridge. Barracks require a higher expression than workshops or workhouses, for they are villages for the housing, feeding, and disciplining of soldiers. The men who live in them have devoted their lives to the preservation of their country, the highest patriotic duty that man can perform. Our modern international warfare has been but a duel, in which you are only allowed to disarm, wound, or kill your adversary, and possess yourself of his valuables; in real warfare the country and all the property in it becomes the possession of the conqueror, and he either destroys the people or turns them into beasts of burden, and we are not sure we have yet seen the end of war.

Most buildings have some special use for their main ends, the distinction between them is the relative proportion between the parts for emotional and unemotional use. The commonest sort of buildings are wholly for material needs, and buildings gradually rise in position as the emotional parts prevail over the material.

Religion, however, has been and must always be the mother of architecture in its highest sense; for beyond providing for the ritual, the whole cause of the building is to raise the highest emotions.

I cannot conceive man ever being without religion; by it his natural curiosity about himself and the universe is attempted to be satisfied, the question of what is happiness is defined, and he is shown how he may try to attain it; by it he is taught to bear the terrible ills with which life is fraught, and how to purge his soul from guilt. A cube with a recess for the altar was the shape chosen by the early Christians for their Church. The shape we now have is mainly accidental. Constantine saw in his vision a cross, and he presented the Christian community of his day with the unused Basilica of Lateranus, in which the Christians saw the taw or primitive cross in the junction of the transept in front of the judgment seat, with the nave.

The Romish Church greatly enlarged the early Christian symbolism, and either invented, or adapted from the pagans, an elaborate ritual, both grand and impressive. No one who has seen the open-air service of the Corpus Domini at Venice can fail to have been struck by its grandeur and solemnity. From the left door of St. Mark's the procession emerges; besides the officiating priests bearing candles, each confraternity of Venice sends some at least of its number, dressed in the handsome costumes of the sixteenth century, who bear on their shoulders a tray or baldachino containing the sacred relics in their gold and silver cases, enriched with enamel or jewels. Each confraternity is accompanied by children dressed as cherubs, or personating the childhood of the holy personages of Scripture, leading lambs, kids, or a donkey adorned with flowers. In the centre of this procession is the Patriarch of Venice, with the attendant priests and acolytes, sumptuously attired. By the time the procession has brought the Patriarch to the centre of the square, the foremost group has passed under the Procuratie to the right door of St. Mark's; the Procuratie is lined with sightseers, and the open square is crowded with gondoliers, peasants and their families, all dressed in their holiday attire. At the end of the celebration of the mass a bell is rung as the host is elevated and incensed, and then the whole crowd fling themselves on to their faces or knees in the blazing sun. The effect of this sudden and united adoration of the multitude is quite electrical, and, when once seen, can never be forgotten.

We Protestants inherited the churches and cathedrals, but had neither symbolism nor any ritual to speak of, trusting not very wisely to that part of the faith that is purely intellectual.

The churches and cathedrals built for the Romish faith were often of costly and beautiful marbles, and were always full of pictures and images; the priests were gorgeously robed, the altar was always splendidly adorned, and the service conducted with symbolical attitudes; while the curling smoke of the drowsy incense, only used at the church services, cut them off from everyday life, and linked them, in the minds of the learned, with the gorgeous rituals of a faith that had passed away.

Cathedrals were surrounded with chapels to saints, besides having the Lady Chapel behind the altar, and there were often chantry chapels as well. Processions were in daily use, and on great occasions the cathedrals were draped with hangings, and the sacred relics and utensils were borne in procession round the whole edifice. The very aisles marked a former distinction. Protestants know not what to do with a cathedral when they get one, and if their churches were to be built in accordance with their wants, would resemble the theatres of the ancients, only roofed.

What form the church of the future may take, we cannot conceive.

If we will only take the trouble of thinking, we can pretty well tell the character of the emotions that each sort of building should excite, though it is not quite so easy to sort them, as it might seem.

It is customary to call the body, those parts alone that are not the organs of thought, will, and the affections, and I shall keep to the ordinary nomenclature. The body can be improved in strength and comeliness by pure air and sunshine, sound food and drink in moderation, by exercise, cleanliness, and the proper alternations of heat and cold; this, however, does not only improve the body, but the mind, for mental vigour mostly accompanies bodily vigour, though there are notable exceptions.

We have no word but a Greek one, "Gymnasium," for a building devoted to bodily training, in which every muscle should be exercised, and the proper co-ordination of the body be carried on, the movements instantly following the directions given by the eye or ear, while every motion should be dignified and graceful. It is the want of what the Greeks included under music, the harmony and gracefulness of every movement, action or speech, that helps to render us so inferior to the ancients.

Gymnasium means a place for the naked, and we do not so exercise. Yet, not to speak of the architecture, a gymnasium would be a fine opportunity for displaying sculpture of the exercises of the ancients, and of our own, if the English athletes were in one tight-fitting dress, for though much of the beauty of the modelling would be lost, some notion of the general form and action would be given.

We have no word for a building devoted to the training of the will, for there is no such building, and no such training, except incidentally, though this training alone can be dignified with the name of education. We have schools and colleges for the mental training of youth, institutions where men train themselves and others for mutual information and encouragement. Even though we be the strongest advocates for bodily training and the greatest admirers of bodily perfection, I think we must admit that those who have arrived at great mental excellence are in a higher grade, and have mostly conferred greater benefits on their fellows: and we should treat the buildings æsthetically, according to the importance of the training they give. There are also buildings for insensible instruction, such as libraries and museums; for State, as Royal and Municipal palaces, and for the reception of foreign ministers; buildings for pleasure and instruction combined, such as concert and dancing rooms, picture galleries and theatres. We have only two or three mansions in England built with public money for great generals, to mark the nation's gratitude for the national benefits they have conferred—such as Blenheim for the Duke of Marlborough, and the Duke of Wellington's house, although this should have been much grander. The want of grand houses to mark the gratitude of the nation to its great men, is only one of the proofs of the ignorance of our statesmen of the value of the fine arts.

No one can see Blenheim without being struck with its architectural magnificence as well as its size; and consequently Marlborough's victories over the armies of Louis XIV. are constantly being recalled to the memory of succeeding generations; while Wellington's house is neither large enough nor admirable enough as a work of art to excite attention. It is, however, a house rather more important than a common one, and so can be used by those who know it to point a moral or adorn a tale. We miss, too, in the fitness of things, a house to Nelson, who did quite as much for the preservation of England as Wellington himself. Of course, the saving of the nation from conquest is the most important service a man can render to his country, though I cannot help thinking that diplomatists, who secure this end without the horrors of war, are quite as deserving. I suppose the State has a right to restrain its public honours to soldiers, sailors and diplomatists, but even to them the presentation of a really fine house is the most useful and enduring memorial of the nation's gratitude. Wealth is due to these great men, as they have preserved that of the whole country; to be made equal with the highest of the living is not much, for they are already their superiors; bronze statues make their personality known, but in any popular commotion, these may like the statues of the great Sejanus, be turned into coal-scuttles and warming-pans.

There are, however, other great men who not only confer benefits on their own country but on the world at large, who I think might too be honoured in this way during their lifetime. Their achievements are not so striking at the time, nor are they so forcibly brought home to every one as victories are; consequently their works, discoveries, or inventions, are only fully appreciated after their death.

Shakespeare and Milton, Bacon and Locke, Inigo Jones and Wren, Newton and Dalton, Watt and George Stephenson, Reynolds, Constable, Turner, and Flaxman, have done more for their country than any conqueror; for they have not only enriched and immortalised their country, but have helped forward every other civilised nation.

It might be supposed that the leaders of labour—I don't mean the misleaders—would desire to celebrate their well-earned fortunes by magnificent houses, but like those successful in fraud and adulteration, they are mostly content to enshrine themselves, their achievements, and their wealth, in the ready-made house of the speculative builder. Poverty, the leasehold system, want of sense, and want of taste, keep London very free from magnificent houses.

Any great achievement should be painted in some of our great public buildings, or there should be a building for the purpose. One of the follies of the age is to overlook the necessity of symbolism, to make mankind feel the importance of a great event, or a great privilege. Can it be supposed that the people appreciate the benefit of living in a free country, of voting for their representatives, or for their council, if they have to slip the paper with their mark into a rough deal box in a shed or a public-house?

The building that holds all but the highest place in a country is the Parliament House, under whatever name it goes, where laws are made for the governance of the country, where honour is awarded or punishment is decreed to the greatest in the land, and where the questions of peace and war are debated.

In so large a proportion of buildings the arrangements are permanently made to meet known requirements or groupings according to a law or a ritual, and unless free grouping under strong emotions were generally to result in particular shapes, it would be impossible to provide for them. We might make ball-rooms circular or elliptical if they were confined to round dances, but neither would be convenient for square dances.

The same might be said of dining-rooms if the old law were observed, that the party should not consist of less than the Graces nor more than the Muses, though this law supposes general conversation, which is hardly to be expected in England; besides round and elliptical rooms waste much space. For public banquets, where set speeches are made, the square or oblong room is convenient enough if the chairman can be heard by the guests, and the guests can be heard by the chairman.

I cannot help thinking that, if the outside of isolated public buildings were made the outcome of the inside, they would differ greatly from those formerly in fashion here. Then the architect's idea was to make a box, and sometimes a very beautiful box, into which the group of buildings was put; but under such conditions it was impossible to judge the purpose of the building from the outside.

Some eminent architectural critics say, that to insist on the outside being the outcome of the inside is a most pestilent heresy; they contend that a beautiful front is wanted to excite admiration, and if this be achieved what more can be desired? In answer to this, it may be said that a building designed on such principles does not emulate one of Nature's organisms.

It may now be well to consider of what a building consists when looked at from the outside. It consists of walls and a roof, unless the roof be flat or hidden, and then of walls only. If there be windows we conclude there must be a roof. It may be as well to speak of the doorway before the windows, for if Dr. Dörpfeld's theory, that Greek temples were lit only from the door, be the true one, windows were not wanted, and the size of the doors must have been proportioned to the spaces to be lit. Doorways in Mediæval buildings were sometimes used for lighting, as at the Lower Church at Assisi. In Gothic cathedrals the height of the doorway is said to have

...n regulated by the height of the banners ...ried in processions.

There is such a thing as æsthetic lighting, though ...has been denied. Nothing, for instance, could ...ve been finer than the light thrown from the ...or of a temple on to the idol at sunrise; we can ...dge of the effect by the gorgeous appearance ...esented by the choir of St. Lorenzo outside the ...alls when the setting sun flames through the ...estern eye.

Æsthetic effects are produced in two ways; ...ly, where the light is pure, and is used to ...oduce a strong mental impression, as well as to ...minate. Of this sort of lighting the Pantheon ...Rome is the most brilliant and complete ...ample, for though all other buildings lit in the ...me way are effective, they are on a smaller scale, ...d their architecture is not to be mentioned in ...e same breath with that of the Pantheon. The ...hole light in the Pantheon coming from that ...normous eye in the top of the largest masonry ...me in the world, produces the most solemn and ...blime effect, and the deep blue shadows cast by ...e coffers on the whitewash are never to be ...rgotten. There is, too, a sort of faint echo of ...e single brilliant flood of light coming through ...e eye in the chequered light from the bronze ...nlight, subdued by coming through the deep ...rtico.

In churches, and in some secular buildings in ...t countries, the effects seen in forests are often ...oduced. You look into gloom from light, or ...om light into gloom. In the Lower Church at ...ssisi, where there is only a dim light in the ...ave, you look thence on to a blaze of light from ...e open north door at the west end; the door ...self is not visible, only the illumination from it. ...n Strasburg Cathedral you look from the bright ...ave into the gloom of the grand apse. Both ...ffects may be seen at the Alhambra at Grenada, ...here you look from the dark rooms into the ...lazing sunshine of the courtyards, or from the ...unny courtyards into the gloom of the chambers.

The same effect is seen from the little chapel ...n the north side of the choir of St. Mark's, ...here from the gloom you get a glimpse of the ...reat west window of the nave, while by standing ...n the light transept, you see the gloom of this ...ittle chapel with one gleam of light from its ...inute window. By looking from the nave ...cross the grey aisle into a chapel lit by a small ...indow at Sta. Maria in Cosmedin at Rome ...ou see an almost identical effect, though similar ...picturesque lighting may be seen in many a ...country cottage in England—accidently produced ...it is true, but none the less picturesque for that. ...The other æsthetic lighting is got by turning ...halls into picture galleries of stained glass, mostly ...seen in Saracen houses and in European churches ...Nothing produces a poorer effect than this, ...when the glazier has had the mean ambition ...of trying to rival painting in his windows, and ...aims at making his subjects distinct, well drawn, ...and composed. It is only when the glazier was ...an inspired colourist, and felt that in colour alone ...he must put his trust, that we get that affluence of ...palpitating coloured light that wraps us into ...ecstasies, and brings all heaven before our eyes. ...It was only when he had studied how his little ...bits of coloured glass could be melted by the sun ...into heavenly harmonies, that he surpassed all the ...other arts, by producing rapture in the entranced ...beholder; this enchantment can perhaps only be ...enhanced by clouds of perfumed incense, floating ...across the coloured beams of light, and by the ...softest tones of the organ dying away in the ears. ...The only other use of stained glass is a prosaic ...one, to hide the sight of a dead wall, ugly ...sheds, or a rubbish heap, in some narrow space ...where no sun can get in. Where divine effects ...are to be got, the sun must lend his aid. We ...must always remember that stained glass is only ...permissible where a "dim religious light" is all ...that is wanted; for we must have pure light ...when anything worth seeing is to be properly ...examined.

In some old halls a good effect is got by having small windows high up in the main body of the hall, and so keeping it rather dark, by recessing the ends of the daïs beyond the walls of the hall, and filling each of these recesses with one large window reaching from the level of the table to the underside of the cornice. When the dinner goes on by daylight, the high table is in a flood of light while the hall is dim; but by this device, the walls of the main hall are sacrificed; for pictures on them cannot be seen.

Windows mostly answer a double purpose, they let light in for use and pleasure, and can be looked out of for amusement.

In the case of belvederes, which are built solely for the view, we can afford to sacrifice the walls of the room for the sake of the prospect, but in the case of houses where a fine prospect is as it were thrown in, it is best to confine the outlook to the best prospect, and to make the window at one of the narrow ends of the room, so that the two side walls may be used for pictures or other works of art, but there is no objection to the end window being a semi-circle or half-octagon.

For any building that is to be occupied for work, for living in, or for pleasure, the lighting is of supreme importance.

In the first case, bad lighting not only causes mistakes in the work, but injures or destroys the eyes of the worker; in the second, it lowers the health and interferes with sewing and reading; and in the third, it prevents the pictures or other beautiful objects in the room from being properly seen. For the ordinary dwelling-house where the rooms are mostly square or oblong, and when the longest side of the oblong is not more than once and a half, or once and three-quarters of the narrow side, I consider the lighting is sufficient, if at the far end between sunrise and sunset there is enough light to read by. This amount of light is attained by allowing one foot of light for every hundred cubic feet of space in the room; though it is just as well to allow a little more, provided that the light be admitted from one opening carried up to the soffit of the cornice, and that the light is absolutely unobstructed. If the light be obstructed then we must gauge with the photometer the loss of light, and increase the area accordingly.

In cities unobstructed light is rare, and is not often obtainable even in the country, as trees, shrubs, and rising ground mostly obscure much of the lower light. In towns we may say that very little light comes through the lower part of windows, and that we should only regard that part where the sky can be seen.

Gwilt says there is a gallery in Windsor Castle that is 90 ft. long, 34 ft. wide, and 33 ft. high, lit by a north window that nearly fills the narrow end, and that it is amply lit. We may suppose the window is below the cornice, and some 2 ft. from the floor, the contents of the room are 100,980 cubic feet, and the area of light 1,020 superficial feet, or just over 1 ft. square to every hundred cubic feet.

I may say here that nothing is more odious in a room, nor that gives a more dismal effect than having a central pier, but this is intensified when there are only two windows with a wide pier between them. No one, much less an architect, would ever think of perpetrating such an abomination if he were free, but architects of a former generation would sacrifice anything to their notions of propriety in a front; and if there were three windows on the first-floor, it was supposed to be necessary to have two below of the same width, the door taking the place of the third. There is a little Renaissance house at Orleans, where this case is properly treated, and we know from the Ca d'Oro at Venice, of Mediæval days, that the Frenchmen, Bon, who did it, was not so affected by symmetry as to spoil his building. Subsequently Cicognara,* who lived in the symmetrical period, added in his illustration another wing, and Fergusson copied it in his history of Architecture; Signor Boni having shown that it never could have existed, as there was a canal there.

I have been amused by two rooms built for painters, one by an eminent deceased architect, which was only lit by a square bay at one angle of the room, so that no picture could be seen except on the chimney breast; the other was a long room with the best light at the end, but the two sides were both pierced with two or three windows as well, so that no picture could be seen except by artificial light.

The exact ratio of the area of efficient light from a skylight to the cubic contents of a room has, as far as I know, never been obtained in this country; though there is a rough rule that if the skylight opening be half the area of the floor it will light a picture gallery. In the case of the Pantheon at Rome, the square foot lights 3,380 cubic feet, and in summer time lights it efficiently, but it does not well light it on a wet day in November, and the light of Italy is much more powerful than that of England.

Some artists object to picture-galleries lit by skylights, affirming that the light from the zenith is too blue. They therefore prefer vertical lights. There is one great advantage in windows, that the light can always be tempered by thin blinds, or be excluded by curtains, without the unsightly bagging of horizontal blinds—which, too, in London, are always full of blacks. What a vision does not this call up, of an upper story being added to many of our picture-galleries and museums, when sufficient light is to be got to light the present galleries by windows.

Mr. Brett has written a paper on lighting, expressed with his usual acuteness, and mainly for the lighting of pictures. With his accustomed kindness, he has allowed me to use this paper, though it would be much better for you to read it yourselves and enjoy the pungency of his style and the information he sows broadcast. In speaking of vertical lights or windows, he says:—

"The daylight under which pictures can be well seen may be either direct or reflected; if direct it should not fall normal to the surface. It may come from the right or the left or from the top, but it must not come from behind the spectators, for two simple reasons. The first reason is that his own shadow will fall on the field of view, and the second that the surface of the picture will shine, so that the wall opposite the window is not a picture wall.

The aspect of the window is not of much consequence, for although direct sunshine kills delicate colour and is not adapted to show anything well, it can generally be diffused sufficiently for most purposes by a blind of fine texture. . . . The fundamental consideration and root of the whole art of lighting depends on having only one single aperture in the wall, so that the direct rays may all enter parallel, and not in conflicting directions.

Let us suppose you have to draw a portrait. A single high light on the head involves a shade in exact proportion to it, which you, as a draughtsman, can supply without any chance of error. The cast shadow likewise will have a known, well-defined and inevitable relation to the shade. This simplicity of light and dark enables you easily to grasp the form, and to appreciate its undulations without uncertainty or confusion, whereas, if you have two sources of light, allowing rays to enter in two different directions, not only will you get on your model two high lights in inconvenient rivalry, but all your shades will be complicated and put out of their normal relation to their lights."

On the subject of cross-lighting he says:—

"If the entrance is opposite one of the windows, as it probably must be, the effect of the light in your eyes is to contract the pupils, and to enable you to utilise only about half the light. The ordinary tenant of a town-house hankers after *more light*, and his architect desperately endeavours to satisfy him, by putting in more windows in another wall, too often overlooking the radical fact that the more light you let into your eyes the less you can see. For instance, it is only when you are kept in deep shade that you can see the stars, although they shine quite as bright in the daytime as at night. When two of your walls are filled with windows, letting in cross-lights, although you have doubled the area of glass, one half of the light is efficiently preventing you from using the other half, since it contracts the pupil of the eye, and floods the retina with diffused light, without revealing the objects you want to see."

Lucretius had observed this, for he says:—

> "How hates the eyeball every gaudy glare;
> How darkens in the sun when poured direct.
> Lucret., lib. 4, line, 343-4.

It is a very common thing to put ground glass in a horizontal frame under a skylight or lantern; a large quantity of the light is lost by diffusion. But that is not the worst fault. In London, a few days' dust obscures half the light, and if it be left for a quarterly cleaning, you have little beyond a mere glimmer.

One great advantage of making your windows in due proportion to the space they have to light is to give variously-sized windows which tell something of the rooms they light, and give variety and scale to the building. I may point to the Spinelli Palace at Venice as an illustration.

All the remaining parts of the outside are the chimneys, the balustrade, the balconies, and the cornice.

To begin with the last, if a sloped roof is to be used, you want a cornice to prevent the snow, rain, or loose tiles falling on to people's heads.

It may be said that a cornice is not wanted, but only a parapet; but if you use a parapet, the gutter is either on the wall or inside it, and as all gutters sooner or later leak and overflow, it is necessary to prevent the water running through the building or into the wall. To do this you want a cornice to take the gutters clear of the walls, and these gutters should be defended by a parapet or a balustrade, to protect those cleaning or repairing

* Cicognara, Diedo, and Selvax: Fabbriche di Venezia.

Measured and Drawn by Mr. H. T. Bromley.

the gutters from falling. Such a cornice may be got by corbelling over, but it is better if it be supported on corbels, for the weight of the roof is ample to keep down the tails of the corbels, even when weighted on their outer ends with a parapet, which, as a rule, should be a pierced balustrade.

Hitherto no serious attention has been paid to chimneys, or we should hardly see London disfigured by cowls, tallboys, and every sort of contrivance for making the chimneys draw, and every one of those contrivances is an object-lesson in ugliness and deformity. In some places they are so thick they look like the wood in Dante's "Inferno":—

> "No verdant leaves, but grisly-hued are there;
> No glossy boughs, but gnarl'd with many a knare;
> No fruits, but only poison-galls it yields."
> "Inferno," canto xiii., l. 4 to 6. Musgrave's Transl.

I believe what little knowledge of the subject there is, is carefully concealed as a trade secret, yet furnace chimneys tell us something—they tell us that a certain area is wanted to take off the smoke, and a certain height to obtain a draught. In a house it is obvious that if the kitchen flue draws, the kitchen being mostly in the basement, the attic chimneys, which are about one-fifth of the length, will probably smoke. We know, too, that if the top of the chimney is not carried up to about 5 ft. above the ridge, it will smoke, and that is on the supposition that there is no obstruction near, higher than the ridge. We know, too, that a high wind does blow down the chimney, as we have the chimney-boards blown out into our bedrooms. The doctoring of chimneys is a regular trade in Italy, though I cannot speak well of the chimneys there, for they mostly smoke; yet the chimney doctor must do some good, or he could not get his living. The doctor makes his chimney-tops of tiles, and he calls them safe against two, three, or all winds, the last being octagonal, covered at the top, and with a projecting tile against each outlet. I do not know how the sweeping is managed, but the fuel is wood, which makes very little soot in comparison with coal.

It seems worth while for the whole profession to combine to have some experiments made on a tall house with chimneys carried up like a tower in stages. There are only a few things to be said about the fireplace: there must be enough fresh air let in there to supply the fire, for if the room is kept tightly closed air will be drawn down the flue to supply the fire, and there must not be too much space between the fire and the mantel, nor at the sides of the fire.

A balcony is not a bad thing if we have a garden or a prospect to look at, and a fine day; occasionally it is agreeable in a street, if you want to address the mob, to see a fight or a procession, and it is admirable for catching cold in at an evening party; but unless you go down to it by a flight of steps it spoils the appearance of all the windows behind it.

In Venice, that city of balconies, there were constant processions on the wider canals that were lined with palaces, and the water and its reflections alone form a lovely picture to look at.

Parapets or balustrades are necessary where there are flat roofs, not only to prevent persons falling off, but to give the real scale of man to a building. I cannot commend those gigantic balustrades that are put up as a finish to a front, as they destroy the scale of the building, nor those of ordinary size used to hide mean roofs, that are perched up so high that when you are in the gutter the bottom of the balustrade is level with the crown of your hat.

DOORWAY, ST. HELEN'S, BISHOPSGATE.

THE south doorway of St. Helen's, Bishopsgate is well known to most of our readers, being one of the numerous interesting details of this fine old church.

This doorway, which has a richly-carved wooden vestibule attached to it, leads into the middle of the south side of the nave, and was inserted between the years 1631 and 1633, when extensive repairs were made to the church under the superintendence of Inigo Jones.

The illustration is from a measured drawing by Mr. H. T. Bromley.

THE ARCHITECTURAL ASSOCIATION:

PARTY WALLS AND PARTY STRUCTURES.

THE ordinary fortnightly meeting of this Association was held on the 2nd inst. in the Meeting Room of the Royal Institute of British Architects, 9, Conduit-street, Regent-street, the President, Mr. E. W. Mountford, in the chair.

The minutes of the previous meeting having been read and confirmed, the President proposed the name of Mr. G. H. Fellowes Prynne to fill the vacancy on the Committee caused by the resignation of Mr. H. O. Cresswell.

The following gentlemen were elected members of the Association:—Messrs. C. H. Havers and J. H. K. Loos.

The President said that there was one matter which he wished to refer to in connexion with Mr. Crace's Colour class. At present one meeting had been held and only three members attended. Unless there were a better attendance at the next meeting the committee considered it was not fair to ask Mr. Crace to continue the class. He hoped that between then and the next occasion on which the class met they would have a considerable number of fresh members so that they would have no reason to give up Mr. Crace's course of lectures and instruction.

Mr. E. Woodthorpe, M.A., then read a paper on "Party Walls," which was as follows:—

Mr. President and Fellow Members of the Architectural Association,—It is with considerable diffidence I approach this subject to-night, one so full of interest to many of us, and one that contains so many points and questions upon which there seems to be very considerable difference of opinion among architects, surveyors, and lawyers (including even judges).

The subject is such a very wide one that I have found it absolutely impossible to give in this paper anything like a full account of the many cases that are well worthy of consideration and likely to arise.

My chief reason for choosing this subject was, that I thought it would be one likely to raise a good discussion; and it is most essential on questions of this kind to have as many different opinions as possible.

It is also necessary for every architect practising in London to know something about this question and the necessary procedure thereon.

Remembering that the majority of my listeners are probably either engaged in practice in London, or likely to be so engaged in the future, I have treated the question mainly from a London point of view, and propose to divide the paper under five heads, as follows:—

1.—The ancient statutes made from time to time, now repealed.

2.—What is a party wall? (Illustrated by cases).

3.—The statutes and enactments now in force regulating party structures in London mainly those that treat of the rights of building and adjoining owners; at the same time giving notes of some of the many superior court decisions which affect the subject.

4.—The usual procedure.

5.—The Bill to consolidate and amend the enactments relating to streets and buildings in London to be introduced by the London County Council as a private Bill, in this next session of Parliament, so far as it affects the rights of building and adjoining owners.

1.—*Some of the Ancient Statutes.*

I think it might be interesting to some of you, to hear a few of the earliest enactments that affected this question, so, by way of introduction, I propose to take you back to the first record, that I have been able to trace, of any enactment concerning party-walls:—

In the year 1189, in the time of Henry Fitz Alwyn, the first mayor of the city. "One great thing done in the time of this first maior was about settling laws and orders for buildings in the City. And there still remains in the books of the chamber the order how to proceed in the assize concerning buildings between neighbours.

It was provided and ordained by the discreeter men of the City, to appease contentions which might arise among neighbours in the City, upon inclosure between land and land; that twelve men, aldermen of the City, should be chosen in full hustenge, and there sworn that they would faithfully perform it, and come at the maior's summons, unless hindred by some reasonable cause, and to be present with the maior for executing the foresaid business." "By these sworn men, orders were taken about party walls, and about building them *sixteen* 'foot,' at least, in height, and *three* '*foot*' *in breadth*, and to build them of stone for security against fire; and, concerning gutters, to receive and convey the water from their houses—all to be at common cost. Also concerning digging pits for water; concerning making windows '*upon*' the neighbours; concerning putting corbells, *i.e.*, girders or beams, into the neighbour's wall," &c.

Note the curious meaning here of corbels, and also the expression "windows upon neighbours," meaning, I take it, ancient lights.

It does not seem that this enactment, as to having party walls of stone three "*foot*" in breadth and sixteen foot high for security against fire, was very strictly enforced, otherwise we should not hear of the divisions of timber that existed before the fire of London.

The next records I can find of enactments concerning buildings were in the reign of Elizabeth, and contained, in a strict proclamation, to prevent overcrowding of buildings and to abate the "embattling" of houses, yet to small effect; but there is no mention of any party division walls, though there were commissions granted "for the suppressing of hedges, ditches, and other such enclosures, to the hindrance of artillery, though the owners of the land were tenants in fee simple."

There was also a proclamation in the second year of James I., in 1605, forbidding all increase of new buildings within the City and one mile thereof, and likewise commanding all persons henceforward to build their forefronts and windows either of brick or stone, as well for decency, as by reason all great and well-grown woods were much spent and wasted (as timber for shipping waxed scarce). But this also had little effect.

From this time began the new reformation of building, although it does not appear to have had much effect in preventing the spread of fire and it seems apparent that any enactments that were in force to divide neighbouring buildings by walls, had been allowed, by not being enforced, to lapse, as I can trace nothing else on the subject until after the Fire of London, though there was another Act in the year 1656 against overcrowding buildings outside the city, part of which I quote:—

In the year 1656 an Act was made for the preventing of the multiplicity of buildings in and about the suburbs within ten miles thereof.

The preamble sets forth how these new buildings, outhouses, and cottages were found to be mischievous and inconvenient and a great annoyance and nuisance.

This enacted that for every dwelling-house, outhouse, &c., erected at any place within ten miles of the wall of the City and not having four acres of land at least there should be paid one year's rent at the full and improved wrackt rent.

And all that should after this build any house or cottage within ten miles should forfeit the entire sum of 100*l.* and 20*l.* per month so long as such house should be continued.

After the fire in 1667 there was a long Act of Parliament for rebuilding the City, to carry out the enactments the Lord Mayor and Court of Aldermen nominated and appointed discreet and intelligent persons in the art of building to be surveyor or supervisors, to whom an oath was administered for the true and impartial execution of their office.

This Act set forth that "There shall be party walls and party piers set out equally, on either builder's ground, to be built upon by the first beginner of such building, and that no man be permitted to build on the said party wall, or on his own continuous ground, until he hath fully reimbursed the said first builder, the full moiety of the charges of the said party wall and piers, together with interest at 6 p.c., to be accounted from the beginning of the said first building."

The party walls by this Act were made thicker than the external walls. This Act also provided "That the surveyors shall take care for the equal setting out, of all party walls and piers, and no person be permitted to build, until that be done, and the builder was required to pay to the Chamber of London 6s. 8d. before the foundation was laid."

At the same time the Common Council made regulations against fire: some of these are very quaint. I will read one: "That every Alderman who hath passed the office of Shrievalty provide 24 buckets and one hand squirt of brass, and those who have not been sheriffs 12 buckets and a hand squirt, to be kept in their respective dwellings; and every other person, being a subsidy man, to keep in their houses a certain number of buckets according to their quality," and every man in case of alarm of fire had to turn out to his door with a bucket full of water ready to hand.

The next Act dealing with party walls was in the 6th year of Queen Anne, and made the regulations more stringent; and in the following year, the 7th of Queen Anne, a further Act was passed enacting that "the party walls were to be wholly of brick or stone, except door cases windows, lintels," &c., and be built "nine inches on each man's ground," and giving the first builder power to pull down the old wall, whether it was of brick, stone, or timber, and build a new wall, the owner of the next house paying for same at the rate of 5*l.* per rod.

Next we come to the Act of the 11th year of George I., in which it is provided that, "if any person refuse or neglect to build his share of a party wall after due notice given him, his next neighbour may build it for him, and oblige the person so neglecting it to pay the charges of rebuilding."

A three months' notice is required by this Act, when the parties cannot or will not agree, and each party, after notice, was required to appoint two workmen (instead of, as now, one surveyor), to say whether the wall was a sufficient or sound wall; but it was sometimes found difficult to get the workmen to agree, and so in a further Act in the thirty-third year of George II., provision was made for a fifth "able workman" to be called in.

However, this method was not found to work well.

A further Act was passed in the sixth year of George III., which enacted "that any person who shall build next adjoining thereto, and make use of the party wall thereof, shall pay to the person or persons who hath the property in such wall, one-half of the value of such wall, or of so much thereof as such person shall make use of, to be estimated and determined by two indifferent persons."

I might remark here that it seems to me a matter of regret that this provision has not been handed down to us and included in the present Act.

A further Act was passed in the twelfth year of George III. to consolidate the previous Acts as to party walls. It enacted that they should be still built half on each owner's soil, but their thickness was to be "according to the cost of the houses." This seems rather a curious regulation.

The next Act was in the fourteenth year of George III., and repealed the last Act.

In this Act buildings were divided into seven classes, and iron doors were first required to openings in party walls.

This Act was repealed in 1844.

Now we come to the 1844 Act, the last one no longer in force.

I cannot help thinking there are several enactments of this Act that had been better inserted in the 1855 Act: for instance, in Section xxviii. (that dealt with damage arising from the erection of an external wall *against* a party wall), the building owner had certain rights to excavate the ground against the party wall, but only on condition that he underpinned the party wall; and in Section xxxi. the building owner had a right to raise the party and the external walls and chimnies; but if at any time the adjoining owner wished to make use of any portion of the part so raised, it was lawful for the owner of the premises so first raised to recover the cost of a proportionate part of the portion so used together with such parts of the chimney stacks. This seems a very fair and necessary regulation, and was contained in many of the old enactments, but for some reason or other omitted from the present Act.

This Act of 1844 assigned to the official referees and district surveyors the parts now taken by the one, two, or three surveyors.

In certain cases it also allowed "reasonable compensation" for any loss which the adjoining owner suffered by reason of the work of the building owner.

It also gave a right to the adjoining owner of land abutting on other premises for further protecting his interest, where the building owner opened windows abutting on the adjoining owner's ground; to serve notice on the building owner calling on him to stop up these windows; if the building owner failed to comply, then the adjoining owner had the right to brick them up himself, and recover the costs of same.

I have always understood from architects who practised under this Act, that except in some few instances it worked fairly well; and the official referees formed an excellent tribunal which I hope some day to see restored in the form of a special court. It has been inserted in the proposed Bill.

2.—*What is a Party Wall?*

The definition of party wall given in the Metropolitan Buildings Act, as you all know, is as follows:—

"Party wall" shall apply to every wall used, or built in order to be used, as a separation of any building from any other building, with a view to the same being occupied by different persons.

The first point that strikes one about this definition is that if it gives an adjoining owner a right of user of a wall that has been erected by the building owner by his placing a building against such wall, if it is allowed to remain, he, the adjoining owner, acquires a right of enclosure, and the building owner will find it very difficult to get rid of this right.

An acquired right of this kind cannot be too carefully guarded against in the first instance; for by the judgment of Angus *v.* Dalton, which is a House of Lords case, "after twenty years' uninterrupted user of support, if it be open and not surreptitious, by the Prescription Act the owner of the dominant tenement is given the indefeasible right of support for his building from the land and building of the servient tenement."

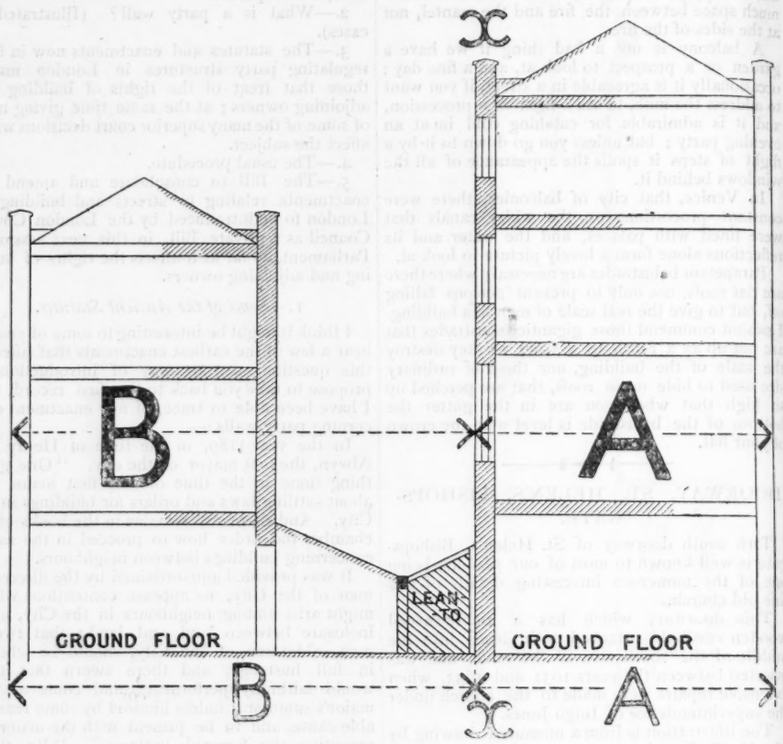
I will explain shortly a case by an illustration.

A has a house, bounded on one side by an external wall, *xx*, built entirely on A's land, and in this wall A has windows above the ground-floor which have existed for over twenty years. B one day erects a lean-to building that does not affect any lights or injure in any way A's wall *xx*. After twenty years, B acquires a right of user and enclosure in A's wall, and, therefore, practically, he acquires a small slice of land. This really might be the effect of the doctrine in the case of Angus *v.* Dalton.

A's only remedy, it seems to me, in the first instance, being either to restrain the adjoining owner by an injunction (which would be difficult to obtain, as the wall has not been interfered with, or in any way damaged), or to pull down his own wall (which of course would be absurd) so as to prevent the right being obtained.

Several cases similar to this have come to my knowledge, and the losing, practically, a slice of land might not, perhaps, be A's only hardship. Suppose, for instance, A wishes to pull down his building and rebuild. Section. xvii of the Metropolitan Buildings Act says: "And every party wall shall be carried up above any part of any roof opposite thereto and within four feet from such party wall;" and Section xiii.: "But no opening shall be made in any party wall except in accordance with the rules of this Act."

If these sections are to be read literally, A will be debarred from having any windows in his own wall, as now it has become a party wall, under the definition in the Statute.



This is a case that I am inclined to think sometimes arises in this way: A, perhaps, is a neighbourly man, and on good terms with his neighbour, and is not to his knowledge in any way interfered with by the lean-to put up by B, nor does he understand the rights he may lose, and probably does not even know that B has not a wall of his own inside under his roof, and the difficulties do not arise until A wishes to take down his building and rebuild.

Now the question we have to consider in respect of this wall is, first, Has the upper part above the lean-to—namely, that part that encloses A's building—become a party wall? It certainly does not separate two buildings at this point, and is entirely built by A on his own land.

I think that the well-known case of Weston *v.* Arnold, though a Bristol case, must apply to a case of this sort in the Metropolis. In that case it was held that where a wall for a few feet from the ground was the dividing wall between two houses, and above that was the outside wall of one of them, the lower part might be a "party wall," and the upper part was not.

A wall might be a party wall within the meaning of the Bristol Improvement Acts, 1840 and 1847, for part of its length or height, and an external wall for the remainder of its length or height.

There is another case—namely, that of Knight *v.* Pursell—and it was there held that "*so far as the buildings* extended *on both sides* of the wall it was a party wall within this Act," namely, the Metropolitan Buildings Act.

Now how are we to answer the question—Is the upper part above the lean-to a party wall?

I think in the face of the Bristol case, which, though a local case, interpreted Acts which contained provisions somewhat similar to the clauses in the Metropolitan Buildings Act—namely, that there should be no openings in the party walls except under certain conditions—and in the face of Knight *v.* Pursell, and after reading the definitions of party wall, I should say, No, the upper part is not a party wall, but an external wall that is, of course, from 15 inches above the top of the lean-to upwards.

The second question is, Can A have his windows again?

I think so, certainly. The Bristol case of Weston *v.* Arnold again helps us here.

A wall in Bristol separating buildings, but having in it, above the buildings, windows enjoying rights of light, was condemned as a party wall under the local Acts, on proceedings taken by the owner of the lights, and ordered to be rebuilt. The Acts contain provision that there shall be no openings in party walls of new or re-erected buildings, except iron doors for communication between the separate buildings.

It was held that the Acts did not apply to these windows, and that the owner of the lights could maintain a suit to restrain the erection of a building that would interfere with them; also in Crofts *v.* Haldane, and this is a London case. It was there held that the right to raise a party structure does not authorise the raising of a structure, so as to obstruct ancient lights, in the adjoining premises, and Mr. Justice Blackburn said, "There is a series of enactments in Part iii. of the Act (*i.e.*, the 1855 Building Act), which do, for obviously good reasons, enable the building owner to deal with party structures in a way in which he would have no right at common law; but there is not one word in them to indicate an intention that he shall be at liberty to raise a wall so as to interfere with a neighbour's right to light, any more than there is to take his land."

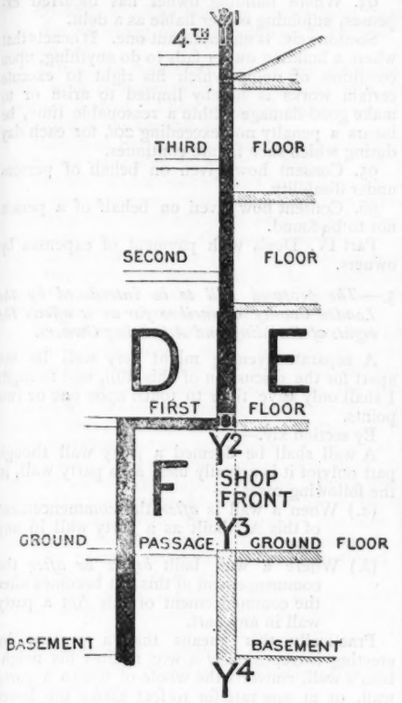
This view also seems to me to agree with the definition of party wall, namely, a wall *used* as a separation of any building from any other building. I do not think anyone could say that that portion of the wall, *x x*, some 40 feet above the lean-to building was a separation between two buildings.

Either we must accept in London the Bristol case or Sections xiii. xvii.; and definition of party wall cannot always be complied with literally without great injustice.

I will give another example while we are considering this question of what is a party wall.

Y^1 Y^2 is a party wall separating two buildings belonging to E and D, and supported on girders, stanchions, and piers. F is a public passage at ground floor, E has a shop front between Y^2 and Y^3 next public passage; D takes his building down, and wishes to erect a higher building. The party wall Y^1 Y^2 is insufficient in thickness and strength for the greater height and weight, and the stanchions and foundations that are in E's building are insufficient in strength for carrying the greater weight to be placed on them. E objects to have his ground floor or shop front or his basement interfered with at all. D has a right to take down the party wall if insufficient, but of course he must go through the proper procedure; but has he a right to go into E's premises and build up sufficient piers and stanchions to carry the extra weight he proposes to place on them? I think not, without E's consent, and probably E would not allow him to do so without adequate compensa-

tion, as I do not think it could be maintained that the lower part is a part of the party wall, though there is certainly a right of support thereon.



This is a very difficult case, and one which I do not think the Act provides for, and the only way in my opinion to arrive at a satisfactory settlement would be to place the whole matter, including the easement of support from the external part below first floor, before the third surveyor, and for the two surveyors to abide by his decision on the whole case, and to agree to sign the award; but even then the award might not be altogether in accordance with the Act, and if either D or E did not agree to it, it might be upset.

While we are on the question of what is a party wall, I shall read what Mr. Justice Fry said in the case of Watson *v.* Gray, which was a Middlesbrough case: "As to the meaning of 'party wall' in a conveyance, it has a meaning 'rather popular than legal.'" He goes on to say, the word "party-wall" may be used in four different senses:—

1. A wall of which the two adjoining owners are tenants in common; this is the most common and the primary meaning of the term.

2. A wall divided longitudinally into two strips, one belonging to each of the adjoining owners.

3. A wall which belongs entirely to one of the adjoining owners, but is subject to an easement in the other to have it maintained as a dividing wall between the tenements.

4. A wall divided longitudinally into two moieties, each moiety being subject to a cross easement in favour of the owner of the other moiety.

As this case was a Middlesbrough case, and does not affect us here in London very much, except so far as party fence-walls are concerned, I do not intend to go very deeply into it, but if anyone wishes to see the case, he will find it fully reported in Professor Banister Fletcher's book. Shortly it was this:—

The plaintiff occupied a house; the defendant occupied another house adjoining. The yards adjoined at the rear. The plaintiff erected a shed against the wall, and raised the wall between the yards. The defendant knocked down with a hammer the raised portion of the wall. The plaintiff then brought an action for damages.

Mr. Justice Fry said: "I am of opinion that the wall in this case belongs to the plaintiff and defendant as tenants in common; either tenant might have wished to train fruit trees there, or to amuse himself by running along the top of the wall," so the defendant was quite within his rights in knocking the raised portion of the wall down.

Mr. Bedells, in his able paper on the subject read before the Surveyors' Institution, gives the apt illustration of the showman Barnum, which I shall quote here. The showman Barnum and his partner had an elephant used for exhibition purposes; the partner not handing over to Barnum his half share of the profits thus arising, Barnum threatened if he did not do so that he would shoot "his half" of the elephant. There he was wrong, as he could not kill his half without injuring his partner's half, and, therefore, wronging him.

So it is with a party wall; the owner on one side, if he damages the wall, though on his own side, injures the enclosing wall of his neighbour's house, and therefore it is only right and necessary that he should be restrained by enactments from doing any injury to what is really a part of his neighbour's house.

Now we come to "Party Structures." I must say a few words on this portion of the subject. The definition in the Statute says:—"Party structure" shall include party walls, and also partitions, arches, floors, and other structures separating buildings, stories, or rooms which belong to different owners, or which are approached by distinct staircases, or separate entrances from without.

Then we have in Section xxiv.:—Every party arch *and* every arch over any public way or passage, &c., shall be constructed in a certain way.

Please note the "*and*" here. This section and the definition of "party structure" contemplate clearly the construction of party arches.

Next we have the fourth right of the building owner in Section lxxxiii.: "In the case of buildings having rooms or stories the property of different owners intermixed, the building owner has a right to pull down such of the said rooms or stories, or any part thereof, as are not built in conformity with this Act, and the two preceding Acts, and to rebuild the same in conformity with this Act," that is, I understand it, with proper party structures of incombustible materials, in accordance with Section xxiv. And the enactment as to the expenses in Section lxxxviii., namely, that the expenses "are to be borne jointly, regard being had to the *use* that each owner makes of *such rooms or stories;*" clearly by this it is supposed they still will use such rooms or stories. But then we have in Section xxvii.:—

"Every building shall be separated by external or party *walls* from any adjoining building."

I will illustrate an example of a party structure by a case which occurred within my own experience.

A was building owner of a house in *X* street. B was adjoining owner of a house in *Y* street. A pulls down his house and finds that B has a room on ground floor that extends right beyond the other portions; this B has owned as long as can be remembered, but there are no deeds to show where the boundaries between the two properties are.

Can it be contended that A has a right to put up the party wall and remove this portion at the ground floor and add it on to his house? I do not think so. All A has the right and would be called on to do would be to construct the floor over and under the ground story in accordance with Section xxiv., that is either with arches or an incombustible floor, though this will not be literally in accordance with Section xxvii., Rule 1. There is clearly an omission in the Act: either "party wall" should have included "party structure" in the definition, or Rule 1 of Section xxvii. should be: "Every building shall be separated by external walls or party *structures* from any adjoining building," as the definition of party structure includes party walls, but it is quite clear that party structures were contemplated by the Act, otherwise they would not be enacted for as they are.

3.—*The Statues and Enactments now in Force. The Rights of Building and Adjoining Owners.*

Part 3 of the 1855 Buildings Act, Section lxxxii. explains that the building owner is the owner of premises adjoining a party structure, who is desirous of executing any work, to a party structure; the owner of the premises on the other side, being called the adjoining owner.

As to who is an owner under the Act. The definition in the statute is as follows:—

"Owner" shall apply to every person in possession or receipt, either of the whole, or of any part of the rents or profits of any land, or tenement, or in the occupation of such land or tenement, other than as a tenant from year to year, or for any less term, or as a tenant at will."

There are many Superior Court decisions on this subject, but I only propose to touch upon a few:—

In Hunt *v.* Harris, the Judges (Chief Justice Earle, Justice Byles, and Justice Smith) decided that the owner responsible for the payment of his share of a wall that was rebuilt, after having been condemned as a dangerous structure, was the beneficial owner, who held a long lease of certain premises, and not his underlessees, but it was remarked by Mr. Justice Smith that it was expedient to deal with each case as it arose.

In Filmingham *v.* Wood, Mr. Justice Chitty decided that it was necessary to serve party-wall notices on every underlessee, whose term was greater than that of a tenant from year to year. It will be seen by these two decisions, that it is necessary to serve underlessees with separate notices, though in the case of a dangerous wall which has been condemned, they may not be responsible for the cost of rebuilding.

In the case of Cubitt *v.* Porter, it was held that in the absence of evidence of ownership of a party-wall, which is included in "party structure," a jury is entitled to find that it is owned by the adjoining proprietors as tenants in common. But in the Standard Bank of Africa *v.* Stokes, whatever the rights at common law in the case of buildings under the Act, such a right no longer exists, but the right depends upon the Act itself. This is a very important decision, and shows us how necessary it is to follow out strictly all the enactments.

And, again, in Cubitt *v.* Porter, the common user of a wall separating lands belonging to different owners is *primâ facie* evidence that the wall and the land on which it stands belong to the owners of those adjoining lands in equal moieties as tenants in common.

The general practice as far as I know among architects is to serve notices on the underlessees, and in certain cases to receive contribution from them.

Section lxxxiii. gives the rights of the building owner.

Section lxxxviii. enacts how the expenses shall be apportioned.

I think, perhaps, it will be best to read these sections together.

The building owner shall have the following rights:—

1. To make good or repair any party structure that is defective or out of repair, and the costs in such case shall be borne by the building owner and adjoining owner in due proportions, regard being had to the use each makes of the structure.

2. To pull down and rebuild where so far defective or out of repair as to be necessary or desirable, and the expense shall be borne jointly, regard being had to the use each makes of the structure.

3. A right to pull down any timber or other partition that is not in conformity with this Act, or with the two preceding Acts, and to build a party-wall, each owner bearing his due proportion of the cost, regard being had to the use he makes of the structure, and also to the thickness required by each building.

4. In the case of buildings having rooms or stories, the property of different owners intermixed, a right to pull down such of the said rooms or stories not in conformity with this Act and the two previous Acts and to make conformable, the cost to be divided, regard being had to the use each owner makes of such rooms or stories.

5. To pull down irregular arches over passages belonging to other persons on the same terms as to costs.

6. A right to raise any party structure permitted by this Act to be raised or any external wall built against such party structure on condition of making good all damage to adjoining owners' premises or to internal decorations, and on condition of carrying up to the requisite height all chimneys of the adjoining owner on or against any such party structure or external wall.

The cost of all this is to be borne entirely by the building owner.

It must be remembered that this clause does not give the building owner any right to raise a structure so as to obstruct ancient lights in the adjoining premises (see Crofts *v.* Haldane) before quoted, and of course the wall must be the requisite thickness required by the statutes to allow of the extra height.

Under this section the building owner has the right to underpin. The Master of the Rolls (Jessel) in Standard Bank of Africa *v.* Stokes explained that the word "to raise" meant *inter alia* "to extend, to enlarge," and accordingly this clause allowed the extension of the wall downwards in underpinning.

In the case of Bradbee *v.* Christ's Hospital (Governors) it was held that "the defendant had no right to underpin the party wall, either partially or wholly, unless that could be done without injury to the plaintiff's house, even though it might be doubtful whether the interests of the parties were several or whether they stood in the relation of tenants in common."

I think it necessary to mention shortly a case recently decided, namely, Williams *v.* Bull.

Williams, the plaintiff, owned a house; after serving notice on the adjoining owner, Bull, the defendant, Williams pulled down the party-wall separating his house from the defendant Bull's house. He then rebuilt the wall partly on his own land and partly on Bull's land, but raised it to nearly double the height at his own expense.

In course of time the defendant Bull pulled down his own house and rebuilt it to a greater height using the upper part of the wall in accordance with a party-wall notice.

The plaintiff, Williams, then brought an action for trespass for interfering with the upper part of the wall that he had raised, seeing that the defendant had not paid for it.

Mr. Justice Mathews gave his judgment in favour of the defendant.

It is not at all clear to me from the report I saw of the case whether there was any award in either case. I should think not, otherwise it would never have arisen. I shall only make one remark on the case, namely, that it seems to me an unfair decision and contrary to the recognised custom, but I cannot help thinking there was either some other point in the case or the action should not have been one for tresspass but for the sum of money for the share of the wall built by the plaintiff and afterwards used by the defendant.

Apply this decision to the first case I illustrated of the lean-to roof, and a great injustice might be perpetrated, but every case must be considered on its own merits.

In excavating ground for building or repairs any carelessness or negligence causing or accelerating the fall of an adjoining house will give a good cause of action (Dodd *v.* Holme).

And a man who orders a work to be executed on his own premises lawful in itself, but from which, in the natural course of things, injurious consequences to his neighbour must be expected to arise, unless means are adopted by which such consequences may be prevented—is bound to see to the doing of that which is necessary to prevent the mischief; and cannot relieve himself of his responsibility by employing someone else to do what is necessary, and so prevent the act he has ordered to be done from becoming wrongful. (Bower *v.* Peate.)

Then we come to

7. Right of building owner to pull down any party structure of insufficient strength for his purpose and to rebuild the same of sufficient strength on condition of making good all damage, the whole expense, including all the damage, to be borne by the building owner.

8. A right to cut into any party structure on condition of making good all damage, the whole cost, including the damage, to be borne by him.

9. He may cut away any footing, any chimney breast, jambs, or flues projecting from any party wall, to erect an external wall against such party wall, or for any purpose, on condition of making good all damage; similarly the cost of all this must be borne by the building owner solely.

Of course, in the case of cutting down a chimney breast, *provided* the District Surveyor has first certified that it may be done without danger to any adjoining building in accordance with Rule of 15, Section xx., and, of course, provided that he gives another footing to the wall where cut away, either lower down by underpinning or in his own wall, otherwise he would be causing damage to the wall, and further, it would contravene the first schedule by not having proper projection of footing on either side thereof.

10. The building owner has a right to deal with the wall of an adjoining owner that overhangs his ground, on condition of making good all damage.

11. A right to perform any other necessary works.

But it must be borne in mind that unless either the consent of the adjoining owner or a proper award has been obtained, these works cannot be carried out by the building owner, even though he has given the three months' notice: I mean, if he wishes to act within the law and protect his client from hostile action.

Again referring to the case of the Standard Bank of Africa *v.* Stokes, such a work as underpinning, even though unattended by any danger to the wall, cannot be carried out where a difference has arisen between the building owner and the adjoining owner unless they concur in the appointment of one surveyor, except by an award as provided by Section lxxxv., Rule 7.

A building owner who pulls down a party wall is not bound to protect, by a hoarding or otherwise, the rooms of the adjoining owner during such pulling down and rebuilding (Thompson *v.* Hill), only I must say this is not the usual custom.

Section lxxxiv. deals with the requisitions of the adjoining owner to the building owner, to build chimney jambs, breasts, flues, piers, or recesses.

4. *The Usual Procedure.*

Section lxxxv. gives the rules to be observed with respect to the exercise by building and adjoining owners of their respective rights.

Rule 1 of Section lxxxv. says:—No building owner shall, except with consent of adjoining owner, or where structure is dangerous and has been condemned, exercise any right unless he has given three months' notice.

If the wall has been condemned as a dangerous structure, it would be lawful for either owner to take down the party wall without the three months' notice, but when it has been taken down the usual procedure will have to be gone through before it can be rebuilt again.

Rule 2 states that the notice must be in writing, or printed, and state the nature of the proposed work and the time at which it is proposed to be commenced.

3. That no building owner shall exercise any right to the inconvenience of adjoining owner.

5. Deals with the requisitions of the adjoining owner.

6. If either owner does not consent within fourteen days after the delivery of any notice or requisition, he shall be considered to have dissented, and a difference shall be deemed to have arisen.

7. In all cases not hereby specially provided for the building owner and adjoining owner, unless they concur in the appointment of one surveyor, they shall each appoint a surveyor, the two surveyors shall select a third surveyor, and such *one* or three or any two of them shall settle by their award all matters in dispute, including the costs of award. "Such one surveyor," of course, refers to the surveyor appointed by both the building owner and adjoining owner, and not the third surveyor; he, the third surveyor, is not an umpire, but only on an equal footing with the other two, although he generally has to adjudicate between them; but it must be remembered that an award signed only by him, as third surveyor, is not in accord with this Section; either one or both of the other surveyors must sign as well.

Wherever possible it is best to have the signatures of all three surveyors.

It is also necessary for the two surveyors to select a third surveyor, though it is not imperative to call him in; but it should be clearly stated in the award (which in this case, of course, would be signed by the two surveyors), that he has been selected.

I am inclined to think that if these necessary steps were always taken, as they certainly should be, and a proper award made before any work were done to a party structure, and before, in fact, the structure were touched, an immense amount of difficulty might be saved, and it would be a very rare occurrence to have recourse to the Law Courts.

Where litigation has arisen, it will almost invariably be found that some link in the chain of this procedure has been omitted.

In the case of the Standard Bank of Africa *v.* Stokes, the judge said that "The Act gave the three surveyors power to determine the time and manner of doing any work, and it would be reducing the Act to an absurdity to suppose that the building owner had a right to proceed with the work until they had so determined.

In certain cases not specially provided for here—namely, where a surveyor dies or refuses to act, &c.—Section xxi. of the Amendment Act of 1882 gives the necessary procedure in the appointment of another surveyor.

8. The award by such one, three, or any two of them is conclusive, or must be appealed against within fourteen day of delivery.

9. If either owner fails to appoint a surveyor for ten days after notice has been given to make such appointment, the party giving notice may appoint.

Rules 11 and 12 relate what appellant from award is to do.

Section lxxxvi. gives power to building owner to enter premises to effect works (of course only when entitled to do so under an award).

87. Deals with security to be given by building owner if required.

89. Account of expenses must be delivered to adjoining owner within one month of completion.

90. Adjoining owner may appeal against account within one month of its delivery,

91. If adjoining owner does not appeal within one month, building owner can recover as a debt.

92. Until adjoining owner pays, the building owner is sole possessor of such structure.

93. Where building owner has incurred expenses, adjoining owner liable as a debt.

Section xciv. is an important one. It enacts that where a building owner fails to do anything, upon condition of doing which his right to execute certain works is hereby limited to arise or to make good damage within a reasonable time, he incurs a penalty not exceeding 20*l.* for each day during which such failure continues.

95. Consent how given on behalf of persons under disability.

96. Consent how given on behalf of a person not to be found.

Part IV. Deals with payment of expenses by owners.

5.—*The proposed Bill to be introduced by the London County Council so far as it affects the rights of Building and Adjoining Owners.*

A separate evening might very well be set apart for the discussion of this Bill, and to-night I shall only have time to touch upon one or two points.

By section xlv.—

A wall shall be deemed a party wall though part only of it is actually used as a party wall, in the following cases:—

(*a.*) When a wall is *after* the commencement of this Act built as a party wall in any part.

(*b.*) Where a wall built *before or after* the commencement of this Act becomes after the commencement of this Act a party wall in any part.

Practically this means that a person, by erecting surreptitiously a w.c. against his neighbour's wall, converts the whole of it into a party wall, or at any rate for 10 feet above the lower building.

Nor is there any provision to prevent any openings above that height being made in a new wall, over an adjoining owner's building. This, I think, should be guarded against.

Rights of Building and Adjoining Owners.

Section lxxii. is a new section altogether.

Rule 1 reads:—If the building owner desires to build a party wall on the line of junction he *may* serve notice thereof on the adjoining owner.

Rule 2:—If the adjoining owner consents to the building of a party wall there (that is, on the line of junction), the wall shall be built half on the ground of each of the two owners.

This might be unfair. Suppose the adjoining owner wants a wall 10 feet high, and the building owner 80 feet high, the wall must either be half on each owner's ground (which would be unfair to the adjoining owner), or there must be two external walls.

Rule 3 is somewhat ambiguous. It reads:—"The expense of the building of the party wall shall be from time to time borne by the two owners, in proportion to the superficial extent thereof, which they respectively from time to time make use of."

Rule 4 says:—If the adjoining owner does not consent to the building of a party wall, the building owner must build external wall on his own ground.

Rule 5:—If the building owner wishes to build an external wall on his own ground, he MAY serve notice thereof on the adjoining owner.

Rule 6 reads:—"Where, in either of the cases aforesaid, the building-owner proceeds to build an external wall on his own ground, he shall have a right at his own expense, at any time after the expiration of one month from the service of the notice, to place on the ground of the adjoining owner the projecting footings of the external wall, with concrete or other solid substructure thereunder, making compensation to the adjoining owner or occupier for any damage occasioned thereby."

This might be hard on the adjoining owner. Suppose adjoining owner has a one-story building only. Building owner might want wall 80 ft. high, and could put his footings and concrete right in adjoining owner's room, as sketch.

And further it reads:—

"Where an external wall is built against another external wall, or against a party wall, it shall be lawful for the District Surveyor to allow the footing of the side next such wall to be omitted." By this it would be lawful to erect a wall 80 ft. or more in height without footings on one side, if an external wall 10 ft. or even less were against it.

By Section lxxv., Rule 1.—One month's notice

will have to be given for a party fence wall, and two months' notice served on the adjoining owner and occupier for a party wall or party structure, instead of as now, three.

By Rule 2.—The building owner must hoard in the adjoining owner's building where wall is taken down.

Rule 4.—A notice shall not be any good unless the work is begun within six months after the service thereof. These are good regulations, and wanting in the present Act.

Rule 8 of Section lxxv. makes it imperative on the two surveyors to select a third to act as "umpire," and an award must be made either by the one surveyor (that is in the case where building owner and adjoining owner agree to have only one surveyor), or the three surveyors, or by the umpire of them, so that if a difference arises the two surveyors must call in the umpire, and the two cannot make the award without the "umpire," as they can in the present Act.

This of course would entail more expense and often occupy more time, as now so often differences are settled by the two surveyors agreeing without having recourse to the third surveyor. I can see one or two difficulties that might arise by this arrangement; suppose the two surveyors did not agree with the umpire as to his costs, they—the two—could not make the award without the umpire, but the umpire would have the power to make the award alone, though the difference might be a very trivial one, and he could put his costs down at anything he liked.

The present arrangement has been found to work well; why alter it?

Section lxxviii. is a new section, and deals with a case where a building owner intends to build within 10 ft. of and excavate lower than the adjoining owner's building.

Two months' notice of this shall be given to the adjoining owner.

Building owner shall underpin or otherwise strengthen the adjoining owner's wall if required, but the expense of this is not included in the expenses to be borne by the building owner, though by Rule 3 the building owner would have to compensate him for any inconvenience, loss, or damage.

Rule 2. If the adjoining owner or occupier gives notice that he disputes the necessity of the underpinning, a difference arises.

This Section will certainly place a rather hard and, I am inclined to think, unnecessary additional restriction on the building owners.

The Section dealing with expenses remains nearly as at present, except that two clauses are inserted for party fence walls.

The last clause of this part of the Bill is an important one, and I will read it:—"Nothing in this Act shall authorise any interference with an easement of light or other easements in or relating to a party wall, or take away, abridge, or prejudicially affect any right of any person to preserve or restore any light or other thing in or connected with a party wall in case of the party wall being pulled down or rebuilt."

This is a good and necessary clause.

I have now come to the conclusion or this paper. I know you will pardon its length if it leads to a good discussion, and where I have gone astray I trust you will put me right. Several of the cases I have illustrated admit of other interpretations. I can only add, I thank you sincerely for bearing with me so patiently.

Mr. Douglass Mathews, in moving a vote of thanks to Mr. Woodthorpe, said that they had heard how in former days each man had to build his own wall not less than 16 ft. in height and 3 ft. in breadth. He supposed that, in a very short time, the place became very crowded indeed, and the wasted space became a great disadvantage, and then came about the question of party-walls and how they could become beneficial. It was mutual interest in a wall, and like a great many other mutual things it did not always happen that it was convenient or satisfactory to both parties. Of course, if they had their own way, they would all be glad to build their own wall, and be independent of their neighbours, but then it could not be, and they must needs take the matter as they found it. There were very often great inconveniences, but then they could not have the advantages without the disadvantages. As the wall belonged to both owners A and B, it was possible that A should profit in one case and B be inconvenienced. On the other hand, in course of time possibly B had the same advantages that A formerly had, and, therefore, it might be that although A had to build the wall and was put to expense for his own purposes, B thereafter would have the benefit of A's wall without the inconvenience and very likely the expense to which A had been put. That had been especially the case since the recent decision in Williams *v.* Bull, where it was laid down that if A carried up his party wall to a greater height than it formerly was, that B should have the advantage of the heightened wall without paying the expense. He certainly disagreed with that. He thought that if B wished to use A's wall he ought to pay his share of the value of it at current prices. It was very difficult to speak generally on that subject because each case had so many different points. He thought that Mr. Woodthorpe rather suggested that it was reasonable that compensation should be made for any loss that might accrue to the adjoining owner by the building owner's work. That, in his (Mr. Mathews's) opinion, was opening a very wide door indeed, and he was afraid it would lead to so much difficulty and expense as to do away with the advantage of the party-wall altogether. The building owner would never know what the extent of his liabilities would be. They all knew what compensation meant, and if B had to suffer inconvenience and expense he might very likely come down on A rather heavily. He had known several cases in which there had been very great hardships indeed to adjoining owners. He agreed with what Mr. Woodthorpe said about the party-wall becoming an external wall above the roof. The only difficulty to his mind in the Williams *v.* Bull case was that the building owner A had rights over B and built partly on his ground, and it seemed hard to that extent. The matter was a very difficult one. The Bristol case had been one which had influenced the London Building Acts. As to what would constitute a party-wall; whether the mere fact of putting up a water-closet or shed at one end of it converted the whole of the wall into a party-wall, he hoped they would have some modification of that, because it happened sometimes that an external wall was used unknown to the owner, and the owner of the adjoining land, and, therefore, by a very captious act on the part of the user a right was acquired which was of very considerable importance to the building owner. Then with reference to the party floors that had been mentioned. He hoped that in the new Act they would have something more definite with regard to party structures. It was most extraordinary, considering the difficulties that arose, how easily that part of the Act was worked. Those of them who had had much to do with that matter found that matters which were found to be extremely difficult and giving rise to a great deal of discussion in a court of law could easily be settled by three men who understood what they were talking about. A surveyor came in as an uninterested party, heard both sides and determined the case. He did not remember any case in which the award had been properly drawn where there had been any difficulty. He did not see the necessity of departing from the 1855 Act which had been found to work so well. He was quite sure that no alteration was called for, and if it were, it would, so far as he could see, lead to considerable expense, and to no purpose. He might call attention to the necessity of drawing up awards very clearly. If awards were upset, it was, generally speaking, from some carelessness in drawing up the award, or from some subject not being thoroughly considered. It was most desirable, under every circumstance, that before a party-wall was touched an award should be made. It was a very simple thing to draw up an award if they knew what the award was to attain. When it was drawn up, there it was as a document, and there was no quarrelling afterwards.

Mr. Lovegrove, in seconding the vote of thanks, said he had had to deal with some of the most difficult questions as to party-walls in London. He remembered a case where the barrister brought out the old argument about a man wishing to run along or enjoy himself on his wall. There was an ordinary party fence wall and garden, and the defendant desired to build a stable and coach-house, and for that purpose underpinned the soil, and for that he was condemned in damages and penalties in the Queen's Bench Division, because he had deprived the adjoining owner of the privilege of using the wall. He did not think that the decision in Williams *v.* Bull was a proper and just one.

Mr. Bernard Dicksee said that a wall was a party-wall whether it was between one building or two. In the new Bill it was stated that a wall built 10 ft. above the lowest roof would be a party-wall. The effect of the new Bill on diagram I would be to deprive B of a story.

Mr. W. H. White having made a few remarks, which were almost inaudible at the reporters' table,

Mr. Thomas Blashill said with regard to the party-wall sections of the Building Acts, that he was in the case which had been so often alluded to — viz., The Standard Bank of Africa *v.* Stokes. The Master of the Rolls—Jessel—who was a man of very peculiar habits of thought, seized upon it, and apparently, without the least premeditation, launched into the whole subject, and told them that those sections not only declared the law, but the whole law, with regard to London. He did not know whether he understood it perfectly himself, but it was a most useful thing to get to know as much about party-walls as possible, because questions upon them were always coming up, and he thought that a fair and useful knowledge on the subject was wanted in an office, and was very easily acquired. An ordinary knowledge of law would be sufficient for it. He wondered who first started the question of a horizontal party-wall. He did not find it in any Act or any book. He very often found it in his office when a gentleman came to him and wanted to do something wrong. He then called a wall a floor, and it seemed to him (Mr. Blashill) to be as ridiculous as anything could be. It was a party structure, so said the Act, and the Act told them how to deal with it. It distinctly told them in more places than one that buildings must be separated by party-walls, and not floors. He would give them a word or two of caution. In the first place the Act said that if the parties could not agree as to what was to be done—they could do without a surveyor—they could appoint one surveyor to act for them, and if they did not do that they must each appoint a surveyor, and the two surveyors were to appoint a third surveyor. He (Mr. Blashill) had never had much difficulty when he had met an architect, but there was a great deal of auctioneer in some surveyors. He had often found instances of that sort. The best way to deal with men like that was to refuse to go into the question at all before the appointment of the third surveyor. The Bristol Act had been alluded to. He remembered a case in which he was engaged, and in which that Act was rather in favour of his client. One of the most eminent solicitors in London was on his side, and he took full advantage of it in his part of the performance, but he (the solicitor) told him (Mr. Blashill) that whenever it was necessary for him to have the whole decision upset under the Bristol Act he would get it done for him. When surveyors met upon a building it was quite true that they were not arbitrators, as each was acting for the best for his client. He thought that it was better to begin with the intention of agreeing than quarrelling; it saved law expenses.

Mr. H. Chatfeild Clarke said that in a London practice he thought nothing was more difficult to architects than points arising out of party-wall structures. Referring to the procedure under the Metropolitan Buildings Act, he thought that a limit should be put on the validity of a party-wall notice. They had a party notice served, and nothing was done for months on it, and then suddenly the building owner woke up and wanted to proceed. That might be hard on the adjoining owner. He thought that the intention of the Act was to give the adjoining owner notice of when the work was to be executed. Buildings, especially in the City of London, often changed hands, and it would be rather hard on any lessee, when an original notice had been served months before, not to allow it to be transferred upon due notice being given. What surprised him was how often architects proceeded without an award at all, which was, of course, perfectly informal. He thought that the first thing to do was to get the award duly signed. He thought that there was a great difficulty arising where several surveyors were appointed, and they had to make several awards on the same wall.

Mr. Langton Cole said that, referring to Mr. Woodthorpe's first example, which had been so much referred to, he should be glad if Mr. Woodthorpe would say what the proper course was for B to adopt if he wished to take advantage of the party-wall. He had a similar case in which he served a notice personally on a reverend priest of the Roman Church, who met him with much indignation and told him that his proposal was preposterous, and that he would oppose him if it cost him 1,000*l.* The case was ultimately arranged, because it appeared that the strip of land on which he proposed to build did not belong to his client, but was held on lease.

Mr. Huntly Gordon said that he thought that in the new Bill it was proposed that there should

be some stipulation that every building should have a staircase. There was absolutely no provision for that at the present moment.

Mr. C. Herbert Bedells, F.S.I., said that it was interesting to notice how, in the proposed new Bill to which Mr. Woodthorpe referred in section 5 of his paper, many points dealt with in Acts previous to that of 1855 were introduced. Mr. H. Chatfeild Clarke had referred to the indefinite period of validity of a party-wall notice under the present Act. In the Bill the point was dealt with and a limit fixed for the work to proceed—viz., not later than six months from the service of notice. This seemed a short time, but it was a step in the right direction, and was one of the alterations he, Mr. Bedells, had suggested should be made in the law in the course of a paper he read before the Surveyors' Institution, the lines of which paper had been closely followed by Mr. Woodthorpe. He (Mr. Bedells) disagreed with what had been said as to the grounds of the decision in the case of Williams *v.* Bull. After carefully investigating that case he had come to the conclusion that the real *crux* of the decision was to be found in the judge's remark that the provision *in the former Act*, under which the adjoining owner, when he wanted to make use of it, would have been required to pay a contribution to the cost incurred in erecting a raised party-wall, was omitted in the Act of 1855, and he, the judge, could not therefore enforce any such contribution. Mr. Woodthorpe had referred to the presumption in favour of the position of the owners in a party-wall under common law being that of tenants in common. He, Mr. Bedells, in the paper referred to, had called attention to the fact that in one case the judges had preferred to presume ownership in severalty, with cross rights of easement, because a tenancy in common implied that either party had a right to demand a "partition." A curious case illustrating this came under his notice recently. An architect had proposed to use a party fence wall for a new building; the adjoining owner objected, and litigation followed. The judgment of the court was that nothing should be done to the wall which was inconsistent with a tenancy in common in the wall. The architect, believing he was acting within his rights, proceeded to erect the building, raising half the thickness of the party fence wall. He was immediately served with notice of proceedings to commit him for contempt of court. He therefore came to ask to be supported in an affidavit that what he had done was not inconsistent with a tenancy in common. He, Mr. Bedells, told him that, in his view, what he had done was clearly inconsistent with such a tenancy. The architect then went to a learned counsel, who confirmed the speaker's view, but found a way out of the difficulty by applying, or threatening to apply, for a "partition," the effect of which in all probability would have been that the court would have given to his client the half of the wall on which he had built as his share. This was, it would be observed, a case of a party fence wall. They had never known in London what to do in such cases, and he was, therefore, very glad to see that his suggestion to include party fence walls within the scope of the Buildings Act, and its procedure so as to give clear directions to a building owner how to deal with them, had been accepted and embodied in the Bill, and which, in this respect, deserved, he thought, the support of members of that Association. He disagreed with one of the alterations proposed—viz., that unless a single surveyor was appointed there must be *three* to make the award (or an award be made by the umpire). In every case of a party wall difference, however trifling, to require a third surveyor either to make or join in an award by all three seemed to him simply ridiculous.

The President then put the vote of thanks, which was carried unanimously.

Mr. Woodthorpe, in reply, said as to the question Mr. Cole asked as to what course B should take if he wanted to build, of course he could not build there because of A's lights. If anyone wanted to learn anything else on the subject he could only tell them to read a paper by Mr. Bedells on the subject, which was reported in the *Builder* in 1879. Mr. Bedells had given them a very good case and had raised a very good point. Every case, he (Mr. Woodthorpe) thought must be considered on its own merits, as they could not lay down a law covering every case.

The meeting then terminated.

ARCHITECTURAL ASSOCIATION, DISCUSSION SECTION.—The fifth meeting of the session was held at the rooms of the Association on Wednesday, Mr. C. H. Brodie in the chair, when Mr. J. C. Stockdale read a paper entitled, "External Plaster Work." The discussion was opened by Mr. Matthew Garbutt, and continued by Messrs. Greenop, Hopkins, and White, when Mr. E. Francis Jackson, of the firm of Messrs. G. Jackson & Sons, and Messrs. H. M. Whyte, and Jno. McDonald, their representatives, gave the meeting the benefit of their practical experience.

COMPETITIONS.

MUNICIPAL BUILDINGS, CARDIFF.—At a special meeting of the Cardiff Town-hall Committee, held in the council-chamber on the 30th ult., the Mayor (Councillor Trounce) presiding, a letter was read from Mr. Harpur, the Borough Engineer, stating that he had again gone carefully into the requirements of the various departments as set forth in the epitome dated October 3 last, in accordance with instructions of the committee of October 16 last. He found that the superficial area of the space occupied by the departments which were absolutely obliged to be situated on the ground floor, together with an allowance for corridor, lavatories, space taken up by walls, and a reasonable amount of open space for light and ventilation, was 58,548 square feet, being 13,095 square feet less than the quantity stated in his letter to the Committee of March 22 last. The total area of the lands at present owned by the Corporation, and including portions of the public footways in Westgate-street and St. Mary-street, referred to in his letter of March 22 last, was 59,753 square feet, and in addition to these figures the surplus lands, after widening Quay-street in accordance with their Parliamentary plans of the present session, exclusive of any portion of the National Provincial Bank and Griffin Hotel premises, would amount to 2,043 square feet, making a total area of 61,796 square feet. That left a margin of 3,248 square feet over the area of land required on the ground floor. Alderman Rees moved—"That, having considered the question of the site for the new municipal buildings, this committee is of opinion that the present site (including the sites to be acquired) is sufficient for the purpose, and, provided the fire-brigade station, the police-station, and the police-courts are removed to another site, it recommends the council to adopt the same." The Mayor remarked that whatever kind of municipal building was erected in Cardiff he should advocate the present site being utilised. The motion was then put and carried by six votes to four. It was also agreed—"That premiums be offered for plans and elevations for the erection of the new buildings in harmony with the above resolution as follows:—1st premium, 500*l.*; 2nd premium, 300*l.*; and 3rd premium, 100*l.*; and that it be made a condition of the competition that the winner of the first premium be the architect of the buildings, and that the amount of the premium be included in the commission payable to such architect."

BATH PUMP-ROOM EXTENSION.—At a meeting of the Bath Town Council held on Tuesday at the Bath Guildhall, the Town Clerk said a letter had been received from Messrs. Baggallay & Bristowe, of Conduit-street, Regent-street, complaining that they ought to have been awarded the second place and premium in this competition. The Baths Committee at their last meeting did not think that the letter should receive consideration, and the next business was proceeded with. Now he had received another letter from this firm of architects in which they said: "As our former letter does not appear to have been submitted to the Town Council, as requested, we herewith enclose a similar letter directly addressed to the Mayor and Corporation, and we trust it will be submitted to the Council itself in the usual way in order that any reply sent may be by the authority of the Council." The enclosed letter stated: "We respectfully call your attention to the fact that we are entitled to the second prize and premium in this competition. The circumstances of the case are so well known that we need now only allude to them to point out that by your recent action you have acknowledged that Mr. Davis was a disqualified competitor." Mr. Moore said the letter was considered by the Baths Committee, and they decided that they could not entertain any objection. It hinged on Mr. Jolly's resolution that although the plans should be disqualified yet the premium should go to the author, and they were bound by that as a Council. On the suggestion of the Town Clerk it was decided to inform Messrs. Baggallay & Bristowe that the Council saw no reason to deviate from the resolution of the Baths Committee.

Illustrations.

WE shall be glad, as on former occasions, to make arrangements for delivering at the Royal Academy all drawings which are sent to us to be photographed for illustration in this journal, before being sent to the Academy.

SCULPTURE: "ST. SEBASTIAN."

THIS group, submitted in competition by the artist, Mr. F. Thomas, for the Royal Academy Gold Medal for Sculpture, was not the successful design; but it was the one most generally admired and which in the opinion of many should have had the medal; and we publish an illustration of it on that ground.

The full subject was "Irene and her attendants removing the body of St. Sebastian from the tree after his first martyrdom." Irene is cutting the cord, the weight of the body being supported by the male attendant, while the woman at the foot is supporting the lower limbs.

As Mr. Thomas expressed himself, in writing to us, strongly convinced of the importance of designing a group of several figures so that it should compose well from all points of view—a generally admitted principle, of course, but one not always acted upon — and sent us three photographs of the group, we have given them all, so as to show the composition from three points of view.

WALL DECORATIONS IN TILING: FOR A HOSPITAL.

THESE figures, representing "Faith," "Hope," and "Charity," carried out by Messrs. Maw & Co., were originally drawn for them by Mr. Weatherstone for a reredos, but have been considerably modified and the drapery rearranged by Mr. C. H. Temple, who painted them in "underglaze" on tiles for the staircase landing in the Shrewsbury Eye and Ear Hospital.

The drapery of the Faith and Hope figures is in mulberry and fawn colours, that of Charity in coffee and copper tints, all lightly treated, each having a diapered background of dark olive green.

A DISTRICT COUNCIL HALL, BERLIN.

THE District Council Hall for the "Mark" Division of the Province of Brandenberg, which we illustrate, contains the meeting halls for both the so-called "upper" and "lower" houses of this miniature Parliament, as well as the necessary administrative offices for the honorary officers and their paid assistants. The ground-floor and first-floor plans, which are appended, explain themselves, but it may be of interest to note that the large top-lighted hall, marked E, on the ground-floor, has been the scene of the more important political speeches of Emperor William II., who is much attached to the district the Council in question represents.

The material used on the elevation is red freestone. The architects were Messrs. Ende and Bœckmann, whose work in Japan we had occasion to illustrate some time back.

The following table gives the names and uses of the principal rooms, which are lettered in reference to it:—

Ground Floor.

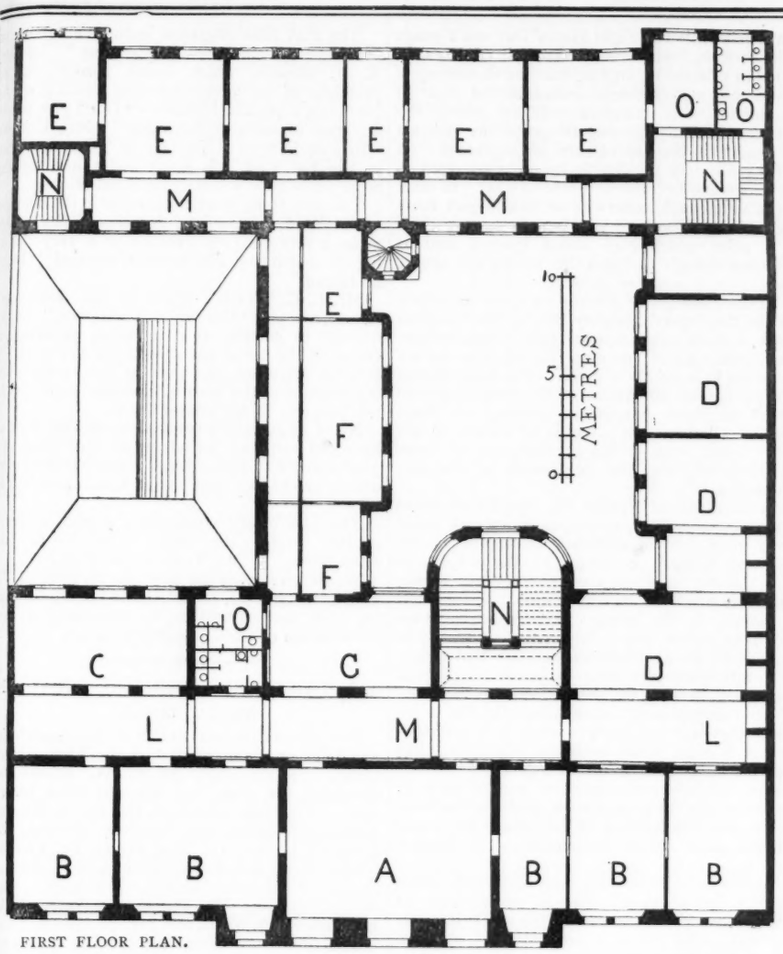
A.—Outer Hall.	I.—Library.
B.—Inner Hall.	J.—Secretary's Office.
C.—Lobby and Cloak-room.	K.—Treasury Department.
D.—"Foyer."	L.—Records Office.
E.—Council Chamber.	M.—Public Gallery.
F.—Refreshment Room.	N.—Staircases.
G.—Committee Rooms.	O.—Lavatories.
H.—President's Offices.	

First Floor.

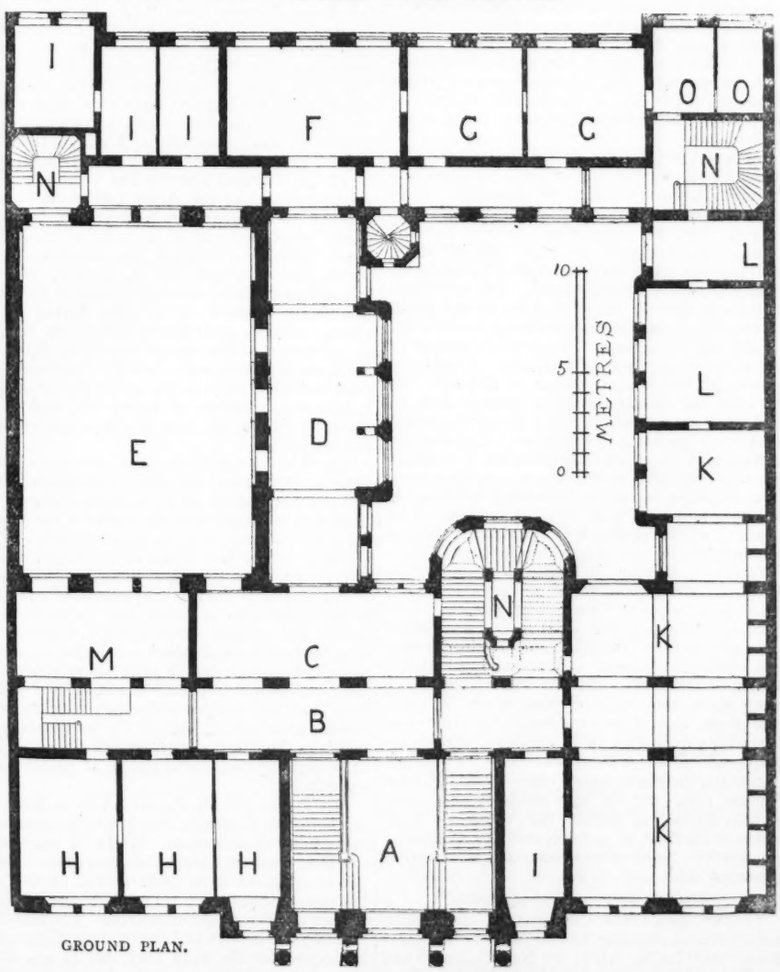
A.—"Privy" Council Chamber.	E.—Board of Works Offices.
B.—Officers' Retiring Rooms.	F.—General Office.
C.—General Office.	L.—Lobbies.
D.—Guardians' Offices.	M.—Passages.
	N.—Staircases.
	O.—Lavatories.

"THE BURY," KING'S WALDEN, HERTS.

WE this week give an illustration of the entrance front of the Bury, King's Walden, Herts, recently erected for Mr. T. F. Harrison. It was originally intended to rebuild only the kitchen wing, to put a new roof over the main portion of the house, to case the external walls, and to replace the sash-windows, which did not form part of the original design, with stone mullioned ones, traces of which were found in one or two instances. On commencing the works,



FIRST FLOOR PLAN.



GROUND PLAN.

A District Council Hall, Berlin.—Plans.

however, it was discovered that the decay in the timbers and the unsoundness of the walls necessitated the entire rebuilding, with the exception of the main staircase, drawing-rooms, and bedrooms over, the general lines of the plan being adhered to, so that the old panelling and chimney-pieces could be reused.

The facings are of Rowland's Castle red bricks, with Messrs. Trask & Son's Doulting stone dressings, and green slate roofs. Messrs. Beeston & Burmester, the architects, superintended the works. Mr. Adcock, of Dover, was the builder, Mr. George Knott acting as clerk of works. The foundations and drainage, forming a separate contract, were carried out by Messrs. Jones & Son, of Liverpool. Messrs. Burt & Potts supplied the iron casements throughout. The decorations of the principal rooms were carried out by Messrs. Gillow.

The drawing was exhibited at the Royal Academy last year. A sketch of the new stables, built under the same contract, appeared in the *Builder* of September 30, 1893.

BANK PREMISES AT DAVENTRY.

THE drawing illustrated shows the premises recently erected at Daventry, Northants, for the Capital and Counties Bank, Limited. The accommodation comprises banking-room, offices, strong-room, &c., and manager's residence.

Red brick and Ancaster stone are the principal materials used externally, with plain tiles for roofs.

Messrs. Kidner & Berry are the architects, and Messrs. Neal & Bosworth, of Daventry, the contractors. The drawing was in the exhibition of the Royal Academy last year.

NEW PORCH, HIGHAM ST. MARY, SUFFOLK.

THIS porch, the gift of Mr. Thomas S. Furniss, a parishioner, has been recently added to the church. The walls are of flint-faced rubble and Portland stone, the timber work of English oak, and the roof covered with plain tiles on oak battening and boarding.

The old wall of the church at this point being somewhat bulged, and otherwise weakened by age, it was required to construct the porch so as to act as a buttress, at the same time presenting the general character of open timber work.

Mr. W. H. Atkin Berry is the architect, and Mr. W. Wheeler, of East Bergholt, the builder. The drawing illustrated was in the Royal Academy Exhibition last year.

ENGINEERING SOCIETIES.

CIVIL AND MECHANICAL ENGINEERS' SOCIETY.—A paper was read before this Society on the 1st inst., by Mr. A. Fairlie Bruce, A.M.Inst.C.E., on the "Rosario Sewage Works." The author commenced his paper by stating that public attention was not forcibly drawn to the unhealthy condition of the town of Rosario, in the Argentine Republic, until the cholera outbreak of 1886 aroused attention, and that plans for a system of drainage were then prepared by Mr. Featherstonhaugh, and accepted by the authorities the following year. He then went on to describe the system adopted for the sewers, the town being divided for drainage purposes into three districts—namely, the Mendoza, Santa Fé, and Catamaria. The Mendoza section has an area of about 1,200 acres, of which 740 are drained. The main sewer is oval in shape, has a sectional area of 25 square feet, a gradient of 1 in 500, and a discharge of 7,611 cubic feet per minute, equal to one-tenth of an inch of rainfall per hour. The heaviest recorded rainfall for four years was 3½ in. in six hours, and only ¼ to ⅛ of the rain reaches the drains. The sewage is discharged into the River Parana. Various interesting details were given of the work and its construction in the district just named, after which the districts of Santa Fé, and Catamaria were dealt with. Allusion was made to the foul condition that the soil was in, and the difficulties experienced in consequence, in carrying out the tunnelling work, of which there was a large quantity, many men having suffered from blood poisoning. The breakage of the iron pipes in unloading from the ships was only 1·1 per cent., and that of the stoneware pipes 2·6 per cent. Extracts were next given of reports of Sir Joseph Bazalgette and others as to the inappreciable effect of the discharge of the sewage into the River Parana. The author was the resident Engineer, and Messrs. J. G. Meiggs, Son, & Co. were the contractors.

MAGAZINES AND REVIEWS.*

THE most interesting article in the *Art Journal* is that which gives some account of that remarkable French sculptor, Christophe, with illustrations of some of his works, in which (notably in "Le Baiser Suprême") he combined sculpturesque power with the expression of deep thought in a very unusual manner. A note on "Mr. Orchardson as a Dramatist," by Mr. Walter Armstrong, draws attention to the dramatic element in that artist's work in a tone of rather too moderate appreciation of an artist who has made painting "a criticism of life," more, perhaps, than any one among his contemporaries. An article on Tlemcen and its vicinity gives some illustrations from photographs of the architectural monuments.

The *Magazine of Art* gives an illustration of Mr. Waterhouse's "La Belle Dame" as a frontispiece. Miss Postlethwaite gives an article (with portraits) on "Some Rising Artists," one or two of whom will think the adjective a doubtful compliment: and Mr. Horace Townsend writes one on H. H. Richardson, the architect, with illustrations of his buildings and a portrait of his large and genial presence. Some such influence as Richardson was wanted to shake American architecture out of its groove; but now that the shake has been given, one looks at the collective work of the shaker with a feeling that it is possible to have "something too much of this." Force there always was in Richardson's work, but refinement was rather wanting, and he repeated certain marked peculiarities too much.

The *Studio* contains, as usual, a great variety of piquant illustrations; among the subjects treated are "Pâte sur Pâte," by Mr. Solon, and "Japanese Netsukos," by Mr. E. Gilbertson. Mr. Swynnerton's design for a fountain, of which two illustrations are given, is certainly original, but seems rather boisterously so.

The *Quarterly*, under the title, "Some Theories of the Ice Age," devotes an article to a review of Sir Henry Howorth's book, "The Glacial Nightmare," in which he has attacked the glacial epoch theory, and argues that the disturbances attributed to the prevalent action of ice might much more probably be attributed to that of water. The *Quarterly* sums up in favour of Sir Henry's views, and hails him as a deliverer of mankind from the prospect of an event which would crush out all that civilisation has achieved, and leave a *tabula rasa* for a fresh start of a human race out of protozoa. An ably written article on "Betterment and Local Taxation" exposes very strongly the folly of the illogical craze, as it may be called, for "betterment" which seems to have seized upon some Municipal politicians.

The *Edinburgh Review*, in an article on "The Economy of High Wages" (mainly a review of a book under that title by Mr. Schoenof, of New York) endeavours to prove, and makes a rather remarkable case for it, that high wages and shorter hours do not mean greater but less cost of production. The main ground for this apparently paradoxical position is that the efficiency of the workman, secured by better living, is a far more important factor in production than has been generally recognised, and that more efficient work is done in proportion to the time employed, with shorter hours. Some of the statistics given in favour of this view are startling; but there seem to be two considerations omitted in the argument: 1st, how far can it be carried, and where is the point at which the advantage ceases, since it is self-evident that the argument cannot be carried *ad infinitum*; 2nd, what is likely to be the effect on the duration of human life of doing all work against time so as to make the most out of the shorter hours? This point is not even touched on. Yet when Mr. Schoenof says that English factory girls have not the nerve power to follow the high speed at which American cotton-spinning machinery is worked, surely it must be evident that the human system must pay in another way for this high tension—must wear out sooner. The remarks on the importance of healthy housing and good ventilation in enabling the artisan to do his best with his work, are admirable, and we are glad to read them. But the article, as a whole, fails to grasp the entire conditions of the problem; the reasoning stops short just where the real difficulty comes in.

To the *Contemporary* Mr. John Rae contributes an article on "The Eight Hours' Day and Foreign Competition," which is in the same strain as the one last referred to, arguing that the shortening of hours has not hitherto increased the cost of production, and therefore will not now; the writer apparently ignoring altogether the question of finality in the use of such an argument. At what point does the shortening of hours cease to be a gain and become a source of loss? It must do so somewhere, otherwise we should gain more by reducing labour to one hour a day; but this is a point which each writer ignores, and is innocent enough to think his reader will ignore also.

In the *Fortnightly Review* we have an article on the Employers' Liability Bill, by Mr. Vaughan Nash, written on the artisans' side of the question, and in the tone of contempt for all who can see the other side which is usual. Mr. Nash thinks the public are not aware of the frequency with which accidents happen in carrying out large works. Perhaps not; but is he aware, on the other hand, what a large percentage of these happen purely from the carelessness of the men themselves?

In the *National Review* Mr. Hugh Bell writes some common-sense, accompanied by and based on a good deal of statistics, in regard to the "Living Wage." Summing up the subject, he says, "If we heard less about the rights of labour, and more about its duties, I should feel greater confidence in the future. As long as men are taught to believe that a duty is laid on society to provide for all its members, and not that a duty rests with each individual to justify his place in the world, so long we shall have crowds of so-called 'unemployed' clamouring for the work which they will not perform when it is offered." Which is more sound sense on this subject than we have lately been accustomed to see.

The *Century* commences its number with an article on Mr. Tadema, his art, and his dwelling-house, with illustrations of the latter; an article which cannot fail to be interesting to English readers.

In *Harper's Magazine* a long illustrated article on "A Bar of Iron" (No. X. of a series on "Great American Industries") is really interesting and useful, giving a great deal of practical information in a pleasant and readable manner.

Scribner includes a long and appreciative article by Mr. Cosmo Monkhouse on "Edward Burne-Jones," with a number of very good illustrations from his pictures. Did *Scribner* receive a private intimation in advance of the honours destined for the painter, that the article comes so pat in at the right moment?

In the *New Review* Mr. Walter Crane concludes his picturesque and original "Impressions of America," accompanied by sketches. How America looked to Mr. Crane is a matter of more interest than its impression on the ordinary Briton. Mr. Crane is given to look at things from his own standpoint and without considering what is the correct thing to say. His comments on the way they do things in America are plain-spoken and caustic. American energy, he observes, is fitful, like the climate. "I was not impressed by any superior quickness or sharpness. I had to do with a lightning picture-hanger at Chicago. By the short and simple device of French nails he certainly got on quickly; but I found the works were apt to get hung upside down." One instance of American directness of application in a notice-board is amusing. It was on the temporary door of a hoarding round an unfinished building in Chicago, and read thus—"Keep outside. This means *you*"; a mode of prohibition capable, in one form or other, of very wide application.

Longman's contains an article on "Colour," by Mr. J. G. McPherson, which is very elementary, but may be useful to "the general reader."

Macmillan has a fine little article by Vernon Lee on "Modern Travelling," summing up with one mystery connected with travelling, "almost too subtle for words. Do you know what it is to meet, say in some college room, or on the staircase of an English country house, or even close behind the front door in Bloomsbury, the photograph of some Florentine relief or French Cathedral, the black, gaunt Piranesi print of some Roman ruin, and to feel suddenly Florence, Rouen, Reims, or Rome, the whole of their presence distilled, as it were, into one essence of emotion"? Some of us know; and, the rest, as Browning said—

"The rest, they may live and learn."

To the *Nineteenth Century* Mr. C. Whibley contributes an amusing and cleverly-written short article on "Italian Art at the New Gallery," and the Duke of Argyll a paper in which he dismisses the Glacial theory with contempt.

The *Pall Mall Magazine* includes an article on "Ten Days in the Peloponnese" by Mr. E. F. Benson, which seems framed on the principle of the advice we once heard given for becoming a popular lecturer—"Don't give people any real or useful information." Mr. Curzon's article on Bangkok (No. III. of "Strange Cities in the Far East") is much better, and includes some really good architectural illustrations.

The only thing of artistic interest in the contents of the *English Illustrated Magazine* is the frontispiece, a very good reproduction of a very charming silver-point by Mr. Sainton, entitled "Dolce far niente."

Mr. L. C. D'Oyle's article in the *Gentleman's Magazine*, on "Gas as a Sanitarian," hardly answers to its title, as it is merely an article in favour of the use of gas fires in place of coal. It is worth attention, and goes at some length into the question of the most economical use of gas for this purpose, for the poorer classes.

No. 5 of *Punch Pictures* is perhaps the best we have had yet, and introduces us once more to a good many well-remembered favourites, including one or two of the best things Leech ever did for *Punch*.

The *Antiquary* commences a new series of articles under the title "On Roads and Boundaries," by Mr. T. R. Boyle, F.S.A.

We have received the first annual issue of *The Book-plate Annual*, an illustrated periodical dealing with matters relating to the make-up and preservation of books, book-plates, &c.

SANITARY INSPECTORS' ASSOCIATION:

ANNUAL DINNER.

THE eleventh annual dinner of this Association was held on Saturday last at the First Avenue Hotel, the President, Sir B. W. Richardson, occupying the chair, and amongst those present were:—Sir Thos. Crawford, Dr. Thorne Thorne, Professor Corfield, Dr. Danford Thomas, Dr. Louis C. Parkes, Dr. King Warry, Dr. Fletcher Little, Hon. and Rev. Canon Leigh, Rev. J. Diggle (Chairman L.S.B.), Venerable Archdeacon Sinclair, Mr. H. C. Stephens, M.P., Mr. Pickersgill, M.P., and Mr. McMillan.

The first toast, after that of "The Queen and the Royal Family," was "The Church and the Ministers of all Denominations," interpolated into the programme on account of the recent institution of a "Church Sanitary Association." The Hon. and Rev. Canon Leigh, who was called upon to respond, accorded to the Rev. Mr. Lawrence the chief credit of originating the Church Sanitary Association. Sir Thos. Crawford responded to the toast of "The Army and Navy," which Dr. Danford Thomas had proposed. The medical officers of the Army had been, he said, the first to recognise the importance, from the public point of view, of a study of sanitation. Years before the question was taken up by the public, Dr. Marshall, Sir A. Martin, and Dr. Parkes had initiated sanitary reforms in the Army which had resulted in a great saving of life among soldiers, and had consequently relieved the resources of the nation by greatly lightening the drain of men into the Army. Enormous progress had been made in the knowledge of sanitary science, the processes of saving life, and of the means of making the lives of our people healthful and happy.

The "Houses of Parliament" was proposed by Mr. J. McMillan, Mr. H. C. Stephens, M.P. and Mr. Pickersgill, M.P., both responding. Mr. Stephens, in referring to the work of the present protracted session, said the eventual effect of the Parish Councils Bill would be to transfer some of the powers now possessed only by Parliament, or which were in the arbitrary control of a Government department, to parish and county councils. Under the control of such local bodies, more sympathy with local wants would be developed, and sanitation, together with many other local questions, would be placed on a firmer and sounder basis than was possible while they were under the control of an official body. By its means every parish in the country might yet be extricated from those sanitary conditions which, at present, were a disgrace.

Mr. Pickersgill, M.P., who also replied, said the House of Commons was perfectly alive to the importance of sanitation. While he had been in the House a most salutary measure of sanitation had been passed in a great Public Health Act, but that excellent measure would be useless unless it were adequately administered. The number of Sanitary Inspectors in London was disgracefully inadequate for the work they had to do, and it was precisely in those districts which most required them that Sanitary Inspectors were the fewest.

* The object of these notes is to point out anything in the contents of the current magazines which is of special interest to our readers, with occasional brief criticisms on the views expressed in such articles. When a magazine which has been sent to us is not noticed, it is because that number contains nothing that it is within our province to comment upon

In Bethnal Green, the constituency he represented, there were but three, or, at most, four Inspectors, and it was impossible in a population of 130,000 that four Inspectors could fulfil their statutory duties, and with so small a number, there could certainly not be any house-to-house visitation. As local authorities naturally desired to keep down their rates, he thought the time had come when the means for certain improvements should be provided by a central fund, or from a common purse. The Sanitary Inspectors should have a recognised provision, and he thought them entitled to demand and to receive adequate remuneration.

"The Sanitary Inspectors' Association," the toast of the evening, was proposed by the President, who said that the importance of the work the Association had accomplished could scarcely be overstated. Many years ago the difficulty of sanitary reformers was to find men to carry out in practice the lessons taught by scientists, but they had now an army of sappers and miners, who performed their simple, but arduous, and sometimes dangerous, duties in a spirit of devotion worthy of all praise.

The toast having been duly honoured, the President said a great pleasure was given to him in being called upon to present to their late Chairman of Council, Mr. Hugh Alexander, a testimonial—a full purse of money and a gold chronometer. During all the time he had been their President, Mr. Alexander had been the Chairman of their Council, and no body could have a more faithful officer.

Mr. Alexander, in responding, said years ago he had claimed for Sanitary Inspectors a minimum salary of 200*l.* a-year. It was satisfactory to know that many of these officers had now attained that position.

The toast of "Local Government and Education" was responded to by the Rev. Mr. Diggle, who denied that the responsibility for the defects that had been found in the drainage of certain schools rested upon the School Board. Those insanitary conditions were to be attributed to a want of education on the part of contractors of a former time. It would have saved a great deal of money had the work been properly done in the first instance, but the duty of the present Board was to remedy as fast as possible such defects as the Sanitary Inspectors might point out.

Dr. Thorne Thorne proposed the toast of Sir Benjamin Ward Richardson, F.R.S., to which the President replied, and in the toasts that followed, addresses were delivered by Ven. Archdeacon Sinclair, Professor Corfield, M.D., Dr. Fletcher Little, Mr. Aubrey Richardson, Mr. Thomas (Chairman of the Council), Mr. E. Tidman, C.E., and by Mr. Macfarlane (*Sanitary Record*).

ROYAL ACADEMY:

ADMISSIONS TO THE ARCHITECTURAL SCHOOL.

THE following students have been admitted to the Architectural School of the Royal Academy, Mr. R. Phené Spiers, Master:—

W. A. Brown.	W. Hawke.
F. D. Clapham.	J. Kirkland.
S. E. Cook.	W. Mackinnon.
A. R. Hamilton.	E. J. Richmond.

PARTNERSHIP.—Mr. T. Mellard Reade, architect, of Liverpool, has taken into partnership his son and former assistant, Mr. Treleaven Reade, and the practice is carried on under the style of T. Mellard Reade & Son.

PERMANENT WAY INSPECTORS' INSTITUTION.—The annual meeting of the Institution of Permanent Way Inspectors was held at the offices of the Institution of Civil Engineers, Great George-street, Westminster, on the 27th ult., Mr. Swinburn presiding. Mr. John L. Lomax, hon. secretary, having read the balance-sheet, the report of the past year's work was read. This showed that while in 1884 the members only numbered ninety-five, there were now 306 on the books, thirty-three new members having been admitted in 1893. A very successful meeting had been held at Plymouth in the summer, and a number of interesting and valuable papers had been read at different sectional meetings. The meeting then proceeded to elect officers for the ensuing year, the chairman stating that he had succeeded in getting Mr. W. Hunt, Chief Engineer of the Lancashire and Yorkshire Railway, Manchester, to become President, and he therefore proposed that gentleman's name for the office. This was seconded by Mr. Dawson and carried. The other officers elected were: Deputy-President, Mr. J. Swinburn, C.E.; Treasurer, Mr. W. Hirst; and Secretary, Mr. J. J. Lomax. In the evening the members dined together at Cloot's Hotel, Victoria-street, Mr. J. Swinburn again presiding.

THE LONDON COUNTY COUNCIL.

THE usual weekly meeting of the London County Council was held on Tuesday in the County Hall, Spring Gardens, Mr. John Hutton, the Chairman, presiding.

The Council as its own Contractor.—The Works Committee brought up the following table showing the estimated and actual cost of certain completed works which have been carried out without the intervention of a contractor:—

Name and Description of Work.	Date of Council's reference.	Estimate as passed by Council.	Additions under Contract.	Deductions under Contract.	Total estimated cost.	Actual cost.	Details of actual cost.			
							Labour.	Materials and/or cartage.	Use and waste of plant.	Establishment charges.
	1893.	£	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.
Chelsea Bridge—Iron steps and footpath ...	Feb. 7	230	0 15 6	—	230 15 6	215 15 9	188 11 6	91 18 6	5 0 3	10 5 6
Putney Bridge—Roughing carriageway ...	June 6	350	—	—	350 0 0	265 1 10	244 11 1	0 4 6	7 13 9	12 12 6
Westminster Bridge—Painting, &c. ...	Mar. 10 Oct. 3	3,625	—	—	3,625 0 0	3,370 13 7	2,288 10 7	674 13 4	246 19 6	160 10 2
" —Asphalting footways	June 6	1,100	—	—	1,100 0 0	934 18 9	26 2 0	853 18 11	10 7 7	44 10 3
Hermitage Bridge—Widening ...	Feb. 28	510	—	—	510 0 0	414 13 7	151 13 6	233 7 2	9 18 0	19 14 11
Waterloo Bridge—Repaving carriageway	July 11	2,786	—	—	2,786 0 0	2,625 7 7	938 2 11	1,504 10 5	57 13 11	125 0 4
Pool Bridge, Lewisham—Widening ...	June 6	230	—	—	230 0 0	285 8 11	112 16 11	142 3 3	16 16 11	13 11 10
Victoria Embankment—Remetalling roadway	Aug. 1	3,100	236 4 8	—	3,356 4 8	2,935 2 9	429 12 7	2,331 5 1	34 9 9	139 15 4
Northern Outfall Sewer, High-street, Stratford —Approach to bridge.	April 18	730	—	—	730 0 0	508 6 10	409 18 5	41 18 10	32 5 7	24 4 0
Mayford Schools—Erection of cottages ...	Feb. 28 May 9	925	—	16 3 10	908 16 2	1,690 5 6	593 17 4	516 19 6	17 10 4	51 18 4
Plumstead Common—Lodge and conveniences	Mar. 14	1,070	—	6 2 8	1,063 17 4	1,312 8 10	669 7 1	545 10 0	35 1 10	62 9 11
Goldsmith Square—Foundations for buildings ...	Oct. 10	950	—	126 14 1	823 5 11	842 9 8	312 7 7	473 12 4	16 7 5	40 2 4

Colonel Ford moved that the report be not received, since it did not afford sufficient information.

Mr. Campbell seconded, but after a long discussion the report containing the above statement was agreed to.

Use of Hydrants for Flushing Purposes.—The Fire Brigade Committee reported as follows:—

"In compliance with the Council's resolution of October 17 last, we invited the vestries and district boards and the water companies to confer with us on the subject of the use of five hydrants by local authorities for flushing and other purposes. The water companies intimated that they felt that they could not usefully be represented at the conference until they had had an opportunity of perusing the clauses on the subject proposed to be inserted in one of the Bills to be introduced by the Council. The greater number of the local authorities appointed representatives, and we held a conference with them on November 17. During the discussion certain points were suggested which it was thought should be brought to the notice of the local authorities, and a circular letter was subsequently addressed to those bodies inviting them to express their opinion on the points in question. About two-thirds of the local authorities have replied; the remainder have been asked to do so as soon as possible, and we hope shortly to make a full report to the Council on the subject."

Line of Frontage.—The Building Act Committee brought up a report containing the following recommendation:—

"That the application (further considered) of Mr. J. M. Kennard, on behalf of Messrs. Bowman Brothers, for the consent of the Council to the advancement of the upper portion or main frontage of Nos. 128 to 138 (even numbers only), High-street, Camden Town, to the line of the existing one-story shops in front of those premises, as shown on the deposited plan, dated January 16, 1894, be not granted, it being considered undesirable to permit the existing main or upper frontage of the buildings at the portion of High-street in question to be disturbed by the advancement of the premises as proposed."

Mr. Westacott moved that the recommendation be referred back, with an expression of opinion that the application be granted.

Mr. Idris seconded, but the amendment was negatived, and the recommendation of the Committee was agreed to.

Vauxhall Bridge.—Colonel Ford moved:—

"That, as a diver was employed in 1887 and in 1891 (but not since the latter year) to examine the foundations of some of the piers of Vauxhall Bridge, with the result that on each occasion works of reparation were at once carried out at a comparatively small cost, it be referred to the Bridges Committee to ascertain and report on the present condition of the piers of the bridge, with a view to the Council considering whether similar works of reparation should now again be undertaken."

He explained that his object was, if possible, to save the expenditure of 550,000*l.* upon a new bridge. There were bridges, notably Waterloo, that might claim priority for alterations intended to increase the width of the carriage-way.

Three members voted for the motion, which was accordingly lost.

The Council, after transacting other business, adjourned.

NATIONAL ASSOCIATION OF MASTER BUILDERS OF GREAT BRITAIN.

THE National Association of Master Builders of Great Britain held its thirty-second half-yearly meeting at the North Stafford Railway Hotel, Stoke, Staffordshire, on the 30th ult. Owing to the death of Mr. Robt. Dennett, the late President (who died on November 24 last) Mr. Stanley G. Bird was elected to the chair, and representatives were present from London, Liverpool, Manchester, Birmingham, Hull, Derby, Bradford, Bristol, Coventry, Crewe, Burslem, Walsall, Kidderminster, Bolton, Preston, Hanley, Ipswich, Fenton, Stoke, Longton, Leeds, Leicester, Newcastle, Northampton, Tunstall, and Salford. The Chairman reported that the usual half-yearly statements of hours worked, state of trade, and supply of labour in the principal towns of the United Kingdom had been issued to the local Associations.

With reference to the form of contract, the respective Committees of the Royal Institute of British Architects and the Institute of Builders has decided to meet in conjunction with the solicitors appointed to arrange the clauses, with a view to settling any differences that may still remain on the legal points, so that the matter may be finally closed.

The present position of the New Employers' Liability Bill having been discussed, it was decided that as the matter at present stands no useful action could be taken by the Association.

Mr. John Bowen, of Birmingham, the senior Vice-President, was elected President for the ensuing year, and he thereupon took the Chair.

The President, in his opening speech, referred to the severe loss the Association had sustained in the deaths of their late President, Mr. Robert Dennett, and their Secretary, Mr. William Knox. He congratulated the Association on the state of its finances, which, under the able management of the Treasurer, Mr. Jos. Stevenson Jones, had so steadily improved and were now in a very satisfactory condition,

Mr. T. F. Rider, London, and Mr. Jos. Stevenson Jones, Liverpool, were elected Vice-Presidents; and Mr. Stanley G. Bird, London, Mr. R. Neill, jun., Manchester, Mr. J. Howard Colls, London, and Mr. J. C. White, Liverpool, were elected Hon. Vice. Presidents.

Mr. C. W. Green, Liverpool, was elected Hon. Treasurer, Mr. W. H. Smith, Northampton, was elected Hon. Auditor, and the following gentlemen were elected Members of the Council:—Mr. C. H. Barnsley, Birmingham; Mr. W. Sapcote, Birmingham; Mr. J. Henry Marsden, Bolton; Mr. Wm. Moulson, Bradford; Mr. W. Holdsworth, Bradford; Mr. A. Krauss, Bristol; Mr. W. Church, Bristol; Mr. Jos. Bell, Cambridge; Mr. John Walker, Derby; Mr. Thos. Bonnar, Edinburgh; Mr. R. Bennett, Glasgow; Mr. R. Beevers, Hull; Mr. C. Myers, Leeds; Mr. Banks Mawson, Leeds; Mr. Wm. Henry Close, Lincoln; Mr. Hy. E. Dallow, Liverpool; Mr. R. Stevenson Jones, Liverpool; Mr. Jno. Burt, London; Mr. Frank May, London; Mr. William Southern, Manchester; Alderman Wm. Brown, Manchester; Mr. W. H. Smith, Northampton; Mr. Enoch Hind, Nottingham; Mr. Jas. Bowden, Potteries and Newcastle; Mr. John Walmsley, Preston; Mr. C. B. Holmes, Wigan.

Mr. J. A. S. Hassel, of Liverpool, who was a partner with the late Secretary, was appointed Secretary.

Various matters of special interest to the building trade were brought forward and discussed by the members, including the bearing of the case of Temperton *versus* Russell and the Hull Unions, wherein it was decided that further financial support should be accorded.

It was decided to hold the next half-yearly meeting at Bolton.

A vote of thanks to the Chairman for his services concluded the meeting.

ARCHITECTURAL SOCIETIES.

LEEDS AND YORKSHIRE ARCHITECTURAL SOCIETY.—At a meeting of members of this Society, held in the Law Institute, Leeds, on the 5th inst., Mr. G. B. Bulmer presiding, a paper entitled "Notes on Some Bavarian Towns" was read by Mr. E. Guy Dawber, of London, and illustrated by means of a series of photos and sketches. Of Rothenburg, on the Tauber, he said that few places were less spoiled by modern innovations than this town. For the painter as well as the architect there could not be a richer field. Founded in the tenth century, Rothenburg retained most of its original features, and he thought no town in Europe so impressive by reason of its Mediævalism. The numerous finely-carved fountains in the streets, the wrought-iron work and beautiful window grilles he considered specially noticeable. Wurzburg, with its bridge and statues, and Asschaffenburg, with its refined domestic buildings and magnificent palace, were also described. Frankfort, he pointed out, contained some charming examples of slate-hung houses, which were well worthy of study. In conclusion, the lecturer instanced cases of old structures untouched from their commencement that bore unmistakable evidence of having been entirely plastered, and that on the sides not exposed to the weather retained the plaster intact. The bulk of the buildings, he said, were plastered, and from evidence before him were coeval with the time they were built. On the motion of Mr. Dodgshun, seconded by Mr. C. Hall, a vote of thanks was accorded to Mr. Dawber.

CARDIFF SOCIETY OF ARCHITECTS.—The annual dinner of the Cardiff, South Wales, and Monmouthshire Society of Architects took place on the 1st inst., at the Angel Hotel, Cardiff. Mr. E. Seward, F.R.I.B.A., President of the Society, presided, and among those present were the Mayor of Cardiff (Councillor W. J. Trounce), Mr. T. Forster Brown, M.Inst.C.E.; Mr. J. M. Brydon, F.R.I.B.A. (official representative of the Council of the R.I.B.A.); and Mr. W. Harpur, M.Inst.C.E. (Cardiff County Surveyor). The President having submitted the toast of "The Queen and Royal Family," proposed "Our Pastors, Legislators, and Defenders," to which the Rev. Canon Thompson and Lieutenant W. H. D. Caple (hon. secretary) replied. Mr. T. Forster Brown, M.Inst.C.E. (President of the South Wales Institute of Engineers), then proposed "The Cardiff, South Wales, and Monmouthshire Architects Society," and said that during recent years the profession of architects had enormously improved the condition of the houses of the working classes in the matter of ventilation, sanitation, &c. Mr. J. Coates Carter then read the annual report, and the President awarded the prizes gained in the past year's competitions. The President, in responding to the toast of "The Society," incidentally referred to the question of the new municipal buildings for Cardiff, and expressed a hope that the town would soon have buildings that would not only meet all the requirements of the town, but also add to its status and dignity. He also referred to the Society having recently entered into alliance with the Royal Institute of British Architects, as one of the Provincial Societies of Architects, by which their scope had become extended, so that they now represented an altogether wider district than Cardiff, including, in fact, the whole of South Wales and Monmouthshire. This opened up a greatly-improved status for the Society, and gave it opportunities for usefulness, which, as a merely town Society, it could not have commanded, whilst not only to them as practising architects, but to their students, several very direct and solid advantages would accrue, the chief of which he outlined. Mr. Brydon, F.R.I.B.A., in responding to the "Kindred Arts and Sciences" supported the statement of the great advantages arising from combining with the Institute, and made suggestions towards a greater community among architects, sculptors, artists, and decorators, &c. Mr. George Thomas, F.S.I., proposed "The Local Governing Bodies," with which he associated the names of the Mayor, as representing the County Council, and Mr. Lewis Williams, J.P., as representing the Cardiff School Board. In responding, the Mayor observed that there had never been a year in which there were so many important schemes under the consideration of the Corporation as this year. The Corporation were employing 600 workmen on the waterworks, and before the end of the year they would probably have 1,000 *employés* on that great undertaking. The Corporation would shortly be constructing new baths; the electric lighting-station was getting on rapidly; and they were also endeavouring to consolidate the interests of Cardiff in a harbour trust. Mr. Lewis Williams, J.P., also replied. Other toasts followed.

Correspondence.

To the Editor of THE BUILDER.

NONSUCH PALACE.

SIR,—The tradition to which "D. W." refers, that a doorway which he saw near Ewell originally belonged to Nonsuch Palace, would be valuable if he could establish its truth, but I am afraid it is like several other rumours about the old palace, incapable of proof.

I think there is a picture, either at Windsor or at Hampton Court, which shows Nonsuch Palace in the distance, and it is sometimes said that the background of Van-Somer's picture of Henry VIII. and Edward VI. represents a portion of Nonsuch, but this I do not believe, because Nonsuch was left in a very unfinished condition by Henry VIII., in fact it was so far from being completed when Queen Mary came to the throne that it was condemned to be destroyed, but was saved by Lord Henry Arundel.

H. W. BREWER.

WEST HARTLEPOOL TECHNICAL SCHOOL, &c.

SIR,—Can you kindly inform me whether there *is really* such a place as West Hartlepool, and if so, whether they have railway and postal facilities and other indications of civilisation; and how far it is from Charing Cross? I sent in a design for a technical school and public hall to the address of some official of a supposed Corporation of the above supposed town, in reply to an advertisement from such persons.

It is more than nine weeks since such was sent, and I have not yet received the premium or any intimation as to when it will be sent, though I am sure that any competent person could in five minutes say that my design is everything that can be desired.

But even supposing that they are so misguided as to think some other design should have the premium, it is high time that some intimation was given—supposing that the whole thing is not a myth.

"DUBIOUS."

WHITEHAVEN UNION INFIRMARY COMPETITION.

SIR,—In last week's number of the *Builder* was inserted the notice for the above competition.

The Guardians require eleven wards, with eighty-one beds, "kitchen, bath-rooms, and the usual hospital adjuncts." Also a lump-sum estimate; the designs, which the "Guardians" consider best, are to receive the generous premium of twenty guineas, "but it must be clearly understood that the Board do not bind themselves to engage the architect, whose design is accepted, to carry out the works."

Does this mean that if the plans of some local man are chosen, he will be given the work to carry out, whereas one, who is not known locally, would not be so favoured?*

Then follows: "The designs, *which will not be returned*, must be sent to the undersigned," &c., &c.

Can this really mean that the Guardians intend to keep all the other sets of designs, for which they have not paid anything, and would certainly make use of? And would they even be legally entitled to do so? If so, I, with many others, would be a

"NON-COMPETITOR."

The Student's Column.

THE STRUCTURE AND PHYSICAL PROPERTIES OF BUILDING STONES.—VI.

EFFECTS OF VARYING TEMPERATURES.

THE student hardly requires to be reminded that bodies expand on being heated above their normal temperature, and that on being cooled below it they contract. In solid bodies, such as building stones, the expansion may be according to three dimensions—linear, superficial, and cubical. The co-efficient of linear expansion is the elongation of the unit of length of a body when its temperature rises from zero to one degree; the co-efficient of superficial expansion is the increase of the surface in being heated from zero to one degree; and the co-efficient of cubical expansion is the increase of the unit of volume under the same circumstances. It has been shown that these co-efficients vary with different bodies, but for the same body the co-efficient of cubical expansion is three times that of linear; whilst the co-efficient of superficial expansion is double that of linear.

Now, although it is a comparatively easy matter to ascertain these co-efficients for iron, steel, and the like, it is extremely difficult to do so for stone. The quantities to be measured are exceedingly minute, whilst the specimens usually operated upon are small. In this country, but very little attention has hitherto been bestowed on the subject—principally, we suspect, from the circumstance that the results of such an inquiry have not been thought to have such a practical bearing as in some other parts of the world. We hope to show, however, that defects in British building stone, often referred to other causes, have their origin in variations of temperature. In the United States the question has been carefully dealt with. The difficulty of obtaining permanently tight joints, even with the strongest cements, led Colonel Totten to institute a series of experiments† with a view to ascertain the actual expansion and contraction of granite, sandstone, and marble when subjected to ordinary temperatures. Upwards of thirty experiments on each of these varieties of stone showed the rate of expansion and contraction, which seemed to be uniform throughout the range of temperatures employed, to be for granite ·000004825 in. per foot for each degree Fahrenheit; for marble ·000005668 in.; and for sandstone ·000009532 in. Adie found‡ the rate of expansion for Aberdeen grey granite to be ·00000438 in.; Sicilian white marble ·00000613 in.; Galway black marble ·00000247 in.; and Penrhyn slate ·00000576 in. Let us suppose a case where two coping-stones each 5 ft. in length be laid in midsummer at a temperature of 96° Fahr. (which frequently obtains in certain parts of the United States), in winter the temperature falls to zero—a change of 96° Fahr. If the stones contract towards their centres, the whole length of stone put in motion will be five feet. In the case of granite, then (according to Col. Totten's experiments) the shrinkage amounts to ·027792 in., in marble ·03264 in., and in sandstone to ·054914 in. This shrinkage, small as it seems, from necessity gives rise to cracks at the joints, which admit the passage of water; continual shrinkage and expansion must in time crumble the cement and leave the joint permanently open.

The effects of slow expansion as described would not produce such defects were all the stone employed in the construction to possess practically the same co-efficient of expansion; and it follows, therefore, that a building of composite materials

* As far as that provision goes, it is a common formal clause, to prevent the architect having a claim to carry it out if he should happen to be a man against whose character or position there was any serious exception.—ED.

† Totten "Silliman's *Amer. Jour.*," vol. xxii., p. 136; also Merrill, "Stones for Building and Decoration." New York (1891), p. 354.

‡ "Trans. Roy. Soc. Edinburgh," vol. xiii., p. 366.

must suffer most in this respect. In any case, however, it is the joints that are most affected.

There is another aspect of this subject that has also received much attention in the United States, and that is the effect of the *rapid* accession of heat. From the architect's point of view this question resolves itself into two heads—(1) the effect on building stones during a conflagration; and (2) their disintegration and disfigurement owing to wide diurnal changes in temperature.

We have very little to say under the last heading, which has previously received some notice in our columns. But we may remind the student that the rapid change from mid-day heat to evening cold in tropical and semi-tropical countries has the effect of detaching quite large pieces of masonry, especially projecting masonry, from buildings, and that the phenomenon is often accompanied by a loud report. In Western America the thermometer often gives a range of more than 80 deg. Fahr. in twenty-four hours. In the Sahara and other African regions, as well as in Central Asia, the daily range is even greater. This rapid nocturnal contraction produces a strain so great as to disintegrate hard rocks into sand, or cause them to crack or peel off in skins or irregular pieces.

A very suggestive note on the "Effects of Alternations of Temperature on Terra-cotta Copings set in Cement" was communicated to the "Geological Magazine"* some years ago by Mr. T. Mellard Reade, and though the general trend of his observations had special reference to the theory of mountain elevation, the facts adduced are of some interest in the present inquiry. He showed that a terra-cotta coping was permanently lengthened by the cumulative effect of alternations of temperature. The coping in question was freely exposed to the direct rays of the sun, and consisted of two courses of red Ruabon terra-cotta bricks set in cement upon a fence wall, built with common bricks in mortar, a brick and a half thick. The courses were level, but, in consequence of the inclination of the road, the coping stepped down at intervals, so that the under course of bricks of one length was just gripped and held in position by the top course of the next length of coping. When he examined the coping, the end portion of one length abutting against the next length at the drop in the level was thrown up into a ridge of about 6-feet span, the coping bricks being lifted in the highest part 1 in. from their bed. There was a fracture at the crown of the ridge, and another at the springing, but for a distance of 30 ft. the coping was practically one solid continuous bar. A careful examination showed that the coping had "grown" about ¼ in. longer than when it was first set, and that this lengthening, as evinced by movement on the corbel bricks which occur at intervals, was evenly distributed along a length of 30 ft. Mr. Reade states that he has observed several other cases in which the end brickwork and piers have been badly fractured by the force of expansion. When one end is partially free to move (not abutting against a solid pier or other obstruction) each expansion, however small, pushes the coping along towards the partially free end, and on contraction in cooling, the coping cannot draw itself back to the same position as before, so must either fracture or lengthen by increments. He remarks that the phenomenon is well exemplified in brick copings in the neighbourhood of Blundellsands, near Liverpool.

The effect of a conflagration on stone depends on the intensity of the heat, rapid variations in this, and the particular class of stone concerned. We have previously stated that if all the stone used in a building had practically the same co-efficient of expansion that less harm would result than if composite materials were employed. To carry this principle a little farther, we will lay down the law that if all the minerals in a building stone expanded and contracted at the same rate during rapid heating and cooling that one stone would be as good as another (other things being equal) from the point of view of its selection to withstand fire. We know, however, that they do not. Minerals crystallize in several different systems, and, with few exceptions, exhibit, when heated, an unequal expansion in the direction of their different axes, in consequence of which the magnitude of their angles, and therefore their form, is altered. The co-efficient of cubical expansion for several of the more common rock-forming minerals has been determined as follows† :—

Quartz	·000036	Tourmaline	·000022
Orthoclase.....	·000017	Garnet	·000025
Adularia.....	·0000179	Calcite	·00002
Hornblende ...	·0000284	Dolomite	·000035

The quartz, it will be observed, has a co-efficient of expansion double that of the orthoclase, and nearly a third greater than hornblende. The matter is further complicated by the fact that each individual mineral expands unequally, as before stated, along the direction of its various axes. If, therefore, we consider a granitic or syenitic rock in which these minerals play a conspicuous part, we should naturally suspect that on being rent asunder by heat, the damage must be attributed to the peculiar behaviour of its different minerals, which fight and struggle against each other in the stone as the heat varies in intensity. It has been remarked that the sudden cooling of the surface of a heated stone, caused by the repeated application of water from firemen's hoses, considerably assists in the general destruction of the material.

Before considering the divers characteristics of good fireproof stones, we may draw the reader's attention to some experiments directly bearing on this subject, which, if they are lacking in scientific accuracy, are at any rate approximately correct, and have the advantage of being readily understood and easy to carry out. Instead of ascertaining the co-efficient of expansion of the materials, a muffle furnace was employed in the determinations.

In those carried out with reference to the building stones of Minnesota* the temperature of the muffle was raised to a red heat; then the samples of stone, one after another, were exposed to the heat of the muffle, being at first placed near its open mouth, then gradually moved inward until they came into the hottest part, and were heated to redness. Observations were made on the effect of the heating. They were lifted out with tongs once or twice and closely inspected. After the heating test the pieces were severally removed, and whilst still very hot, but at a temperature below redness, they were immersed in a tank of water for a few minutes. The action of the water in crumbling or cracking the heated stones was then noted. In these experiments, as well as in those about to be described, correctness depends much, of course, on the judgment of the operator, which is an uncertain quantity.

Another method, dealing with the building-stones of New York State,† is as follows:—Small cubes of stone were closely packed in the closed muffle of a Hoskins' assay furnace. A copper rod was inserted in the opening at the top of the muffle, and its lower extremity brought to the centre of the mass of cubes, an opening having been left for the purpose. This lower end could be seen from above without removing the rod. Heat was then applied and the blast gradually increased until an intense heat was produced. The copper rod was closely observed and as soon as its extremity began to show signs of melting the heat was guarded; at the first fusion it was altogether turned off. The muffle was then opened and the samples removed and laid upon a clay support in the open air. They cooled rapidly and their condition was noted. The strength of the cold samples was roughly tested by light blows with a hammer.

There is no necessity for us to follow out in detail the results of these experiments; it is sufficient to note that they demonstrate the superiority of sandstones as a class over granites, marbles, and limestones: whilst the last mentioned are prone to calcine at high temperatures. At the same time those tests referring to New York stone clearly prove that there is considerable variation in the fireproof qualities of sandstone. In some of the latter the strength was impaired but little by the heating operation, whilst in others the stone was greatly weakened and scaly; the strength had nearly disappeared in some which crumbled under one blow of the hammer; one specimen crumbled to the finger touch; and two others were practically left as heaps of sand.

Igneous rocks as a whole—granite, syenite, basalt, and the like—are undoubtedly the worst to withstand heat. The relative durability of freestone and granite under fire was well shown, in the burning of St. Peter's Church, Lamerton, near Tavistock, not many years ago—to take an example. The church itself, which was built in great part of granite, was completely ruined, whilst the tower, made of a local freestone, around which the heat of the fire was so great as to melt six of the bells as they hung in the belfry, was left intact, although the granite window-jambs and sills were destroyed.

As fire-proof ashlar we should prefer the finer-grained compact varieties of sandstone to any any other kind; whilst compact limestones and dolomites are better than granite or syenite. For "strong-room" purposes slate has been extensively used for shelves, &c.; and for the backings of furnaces the stone raised from the Upper Greensand of Godstone and vicinity has been much in request. Fire-proof bricks have also been largely employed, but the consideration of these is not at present within our scope.

We have considered the effect of great heat on stone; let us now glance at the action of extreme cold. This was partially referred to in our observations on the absorption experiments, so that the matter may now only be discussed apart from porosity. As heat causes considerable expansion, so does intense cold lead to contraction; but it will be evident that the range below the normal temperature of building stones is not so wide as above it, and the effects of contraction *per se* are consequently not so manifest. Moreover, on the temperature falling below zero, the rate of contraction of stone in bulk must be considerably retarded by the expansive force exerted during the formation of ice within the pores of the material, where the latter contain sufficient water to permit the crystallisation of that fluid.

It has never yet been shown, so far as we are aware, to what depth ice can form in building stone; theoretically we should imagine that the refrigeration could only take place in the outer exposed skin of the material, and that the actual depth must be controlled by porosity, and relative heat and pressure internally. Be that as it may, we can assume that it is only the outermost inch, or less, that is practically affected during frosts.

The expansion and contraction during sudden changes of temperature must be largely superficial, and points of weakness are no doubt created in stone from this cause just underneath their exposed surfaces, by the rapid movement of the outer skin over the more rigid core of the material.

OBITUARY.

MR. J. STOTT.—The death is reported of Mr Joseph Stott, an Oldham architect, who died at his residence, Ellerslie, Queen's-road, on the 21st ult. He was the architect engaged in the erection of a large per-centage of the local cotton-mills. He was fifty-seven years of age.

GENERAL BUILDING NEWS.

NEW CHURCH, COGAN, GLAMORGANSHIRE.—On the 29th ult. the Lord Bishop of Llandaff opened the new church dedicated to the Holy Nativity at Cogan. The church is in the Perpendicular style, and is capable of holding about 311 people. It consists of nave, choir, sanctuary transept, organ space, and vestries, with porch, west bell-cote (two bells), and heating-chamber with Musgraves' apparatus (hot air). The nave is 59 ft. long by 25 ft. in width, and will be seated with chairs. The transept is 15 ft. by 15 ft., and the sanctuary, 15ft. by 14 ft. The total height to the ridge is 39 ft. The walls are built of local limestone in thin courses, lined internally with red and buff Cattybrook bricks, relieved with Bath stone bands. The nave is floored with wood blocks throughout, and the choir and sanctuary with tiles. The church will be lighted by gas from wrought-iron coronas and brackets. The font is a facsimile of the Norman font, which is now broken and much mutilated, in the ancient small church of Cogan. The work has been carried out by Mr. Wm. Richards, of Barry, from the design and under the supervision of Mr. C. B. Fowler, of Messrs. Kempson & Fowler, of Cardiff. The pulpit is of alabaster, red Dumfries and green Bridgend stones, the panels being filled with green Irish marble.

NEW TECHNICAL SCHOOL AT LYNN.—On the 2nd inst. the Duke of York opened a new technical school at Lynn, which has been erected there at a cost of about 2,800*l*. The new school consists of a square block of 50 ft. with a small projection of about 18 ft. by 14 ft. It is a plain brick building, the face and moulded bricks being manufactured at Messrs. Bardell's Bawsey brick-works. The window heads and sills and the gable copings are of Yorkshire stone. The roofs are slated and finished with Staffordshire red ridging. On entering the building is an entrance-hall 8 ft. wide. The first room on the right is the workshop, 22 ft. by 16 ft. On the left of the entrance-hall is the kitchen, to be used as the laboratory for instruction in cooking, and on the right is a door leading into the lecture-theatre, which is 33 ft. by 22 ft., and has seating accommodation for over 100 students, the seats being raised in tiers. Facing the main entrance of the building is a door leading into the physical laboratory (24 ft. 6 in. by 24 ft. 9 in.). On the first landing are

* "Geol. Mag." (1888), p. 26.
† Clarke's "Constants of Nature" (Smithsonian Miscellaneous Collection, vol. xiv.).

* N. H. Winchell, "The Geology of Minnesota" vol. i. (1884), page 186.
† J. C. Smock. "Bull. New York State Museum," vol. ii. (1890), p. 358.

the ladies' cloakroom and lavatories, which are immediately above those for the men. On reaching the first floor, immediately opposite is the door leading into the class-room and the art room, which may be thrown into one large room extending the whole length of the building, 49 ft. 9 in. by 22 ft. Here accommodation is provided for eighty students. The room has a revolving screen in the centre, by means of which it can be divided into two separate rooms. The northern part of the room is used mainly for art work. Over the physical laboratory is the chemical laboratory, which is fitted with benches for twenty-seven students. Over the kitchen is the master's room, and above the entrance-hall is a balance-room. The master's room and kitchen have open fire-places, but the rest of the building is heated throughout with hot water. The ventilation is effected by means of flues specially arranged in the walls, and all leading up to two large Boyles' extractors placed upon the roof. The lighting is carried out by means of gas sunlights. The whole of the internal fittings are pitch-pine varnished, with teak tops to the tables. The lavatories are lined with white glazed bricks, and the entrance-hall has a tiled floor, all the rest of the flooring being of wood. The whole of the architectural work has been carried out by Mr. E. J. Silcock, C.E., the Borough Surveyor; Messrs. Jarvis & Melton were the contractors, and Mr. D. Clack clerk of the works.

TURKISH BATHS, SOUTHAMPTON.—New Turkish baths, situated on the Western shore, Southampton, have just been completed. The baths have been erected at the south-east end of the already existing baths, the work being carried out by Messrs. Crook & Son, from designs and plans by the Borough Surveyor (Mr. W. B. G. Bennett), at a cost of some 1,100*l.* The buildings consist of a dressing-room, three hot rooms, shampooing-room, lavatorium and plunge-bath, and cooling room. The furnace is specially constructed with steel radiators, through which the cold, pure air passes, and is discharged into the hottest room and onwards. The impure air is drawn out of each room by means of a conduit, in which are regulated outlets, this conduit being attached to an upcast shaft by the side of the smoke-flue. Each of the hot rooms is lined with white glazed bricks. Entrance to the Turkish bath is obtained through the general baths.

BAPTIST CHAPEL, DONCASTER. — A Baptist school chapel was opened at Doncaster recently. The architect was Mr. Herbert Athron, and the builder was Mr. B. Wortley, of Nether Hall-road. The new building is in the Domestic Gothic style. The large room is 55 ft. by 34 ft. There is a minister's vestry at the rear, and class-rooms. There is a platform at the end of the large room, with a reading or preaching desk, and underneath the platform is a store-room. Immediately in front of the platform is the baptistry.

BATHS, COVENTRY.—The new baths, in the Pool Meadow, on the east side of Priory-street, Coventry, were opened recently by the Mayor. The building—erected from the designs of Mr. Harold T. Burgess, a pupil of Messrs. Spalding & Cross, and whose plans were awarded the first premium of 100*l.*—has a frontage of 132 ft., and extends back to a depth of 236 ft. The front is of pressed bricks relieved by stone dressings in foliated designs. In the centre it is three stories high, flanked on each side by a one-story wing. This part contains on the ground floor the ticket-office and waiting-rooms—which are entered from vestibules—and above these the caretaker's quarters. There are separate entrances for ladies and gentlemen, with the ticket-office between. The swimming accommodation consists of three large baths, 35 ft. by 90 ft.—first and second class for gentlemen, and one exclusively for ladies. For gentlemen there are ten first-class and twenty second-class slipper-baths, and for ladies four first-class and six second-class slipper-baths, each private bath, as also the swimming-baths, having a shower apparatus. In the first-class men's bath are fifty-eight dressing-boxes. Above the dressing-boxes a gallery is carried all round the bath for spectators. The gallery is reached by the main staircase from the front hall, and is also provided with two additional staircases from the corridor, which extends the whole length of the building, and leads to the men's second-class baths. The roof over the first-class bath is supported by upright columns and wooden beams elliptical in shape, and has a continuous skylight nearly the whole length, and the ventilation is worked from the gangways. The bath is lined with white glazed bricks, with blue ones introduced in various patterns at intervals. The other two swimming-baths—the ladies' and the second-class men's—are similar in size, construction, and appointments, except that there is no gallery. By the corridor the laundry and boiler-house are reached. In the boiler-house are two Cornish boilers, each 24 ft. by 6 ft. From this place entrance is gained to the subways, which pass all round the building. The boilers are by H. & T. Danks, of Netherton. The engineers' work was entrusted to the Coventry Gas Fittings Co., after competition. The clerk of the works was Mr. A. Davies.

PROPOSED ALTERATIONS TO PRESBYTERIAN CHURCH, CARLISLE.—It is proposed to alter and enlarge Fisher-street Presbyterian Church, Carlisle, from plans prepared by Mr. T. Taylor Scott, architect, of Carlisle.

SANITARY AND ENGINEERING NEWS.

UXBRIDGE SEWAGE SCHEME.—On the 26th ult., Major-General C. Phipps Carey, R.E., held a Local Government Board inquiry at the Town Hall, Uxbridge, with reference to a loan for works of sewage disposal. Mr. Garner, Solicitor to the Board, explained the reasons for the application for the loan, stating that it included the construction of precipitation tanks for the Ferozone treatment, six Polarite filter beds, together with sludge pressing machinery, air-compressing plant, and engine with pumps for raising the sewage. It is intended to proceed with the work almost immediately.

SANITARY INSPECTORS.—At a general meeting of the Institute of Certificated Sanitary Inspectors, held at the Parkes Museum, 74A, Margaret-street, W., on the 31st ult., the President, Professor A. Wynter Blyth, M.R.C.S., L.S.A., in the chair, it was unanimously resolved, on the motion of Mr. W. J. Pearce Jenkins, of Bodmin, Cornwall, seconded by Mr. William Parsons, of Richmond, that a representation on the following matters be made to the Right Honourable H. H. Fowler, M.P., President of the Local Government Board, with a view to their consideration in connexion with the Local Government (England and Wales) Bill:—1st., "That the term 'Inspector of Nuisances' be abolished throughout the provinces, and that Sanitary Inspector be substituted therefor as in the Metropolis under the Public Health (London) Act, 1891." 2nd. "That in the interest of public health, and for the proper performance of their duties, it is advisable that permanency of office and some provision for the superannuation of Sanitary Inspectors be made." 3rd. "That a clearer definition of the position and duties of Sanitary Inspectors than that contained in the General Orders of the Local Government Board is necessary."

FOREIGN AND COLONIAL.

FRANCE.—Parliament has authorised the municipality of Paris to apply a sum of seventy million francs for the completion of certain large road-making operations.——An exhibition of the landscapes of M. G. Billet has been opened in the George Petit Gallery. An exhibition of "neo-impressionist" painters has also been organised at No. 20, Rue Lafitte, and an exhibition of "Pastellites Français" will be held next month in the George Petit Gallery.——M. E. Harancourt, the poet, has been appointed curator of the Museum of Comparative Sculpture at the Trocadéro, in place of the late M. Paul Delair.——M. Gaston Redon, architect, has completed the tomb of Franck the composer, the sculpturesque portion of which was executed by M. Rodin.——The Minister of Public Instruction has granted to the town of Saint-Brieue the necessary vote for the reconstruction of the ancient church of Cesson, which is classed as a "monument historique."——Last Sunday was opened the new railway from Douarnenez to Audierne, which gives tourists access to one of the wildest and most picturesque parts of Brittany, the peninsula of Penmarch.——The "Société Nationale des Architectes de France" is organising a competition, in which all French architects or architectural students between the ages of eighteen and twenty-five can take part, for a design for "a villa in the environs of Paris intended for permanent habitation." Designs are to be sent in by May 26.——There is talk of raising, by subscription, a monument in commemoration of the Franco-Russian alliance, both at Paris and St. Petersburg. The monument is to be designed by M. Charpentier.——M. Mathurin-Moreau has just finished the model for the monument which is to be erected at Dijon to the memory of Pierre Joingneaux, the agricultural specialist. The monument will include an allegorical figure offering a palm to the bust of Joigneaux placed on a column. At the foot a figure inscribes on a tablet the names of his principal works.——The widow of J. F. Millet, the painter of the "Angelus," has just died, at the age of sixty-six.——The death is announced, at the age of eighty-two, of M. Debressenne, honorary architect of "Bâtiments Civils et Palais Nationaux," and Chevalier of the Legion of Honour.——We have also to mention the death of M. Armand Cugnard, an able architect and member of Société Centrale des Architectes, at the age of sixty-nine.——The painter Armand Gautier has died at the municipal "Maison de Santé," at the age of sixty-eight. He was born at Lille in 1825, and had received medals in the Salons of 1853, 1861, and 1882. His picture, "Les Folles de la Salpêtrière," had a great success in the Salon of 1857, but he was the object of systematic exclusion on the part of juries, one of his very best works having been refused one year.——The department of Fine Art and "Travaux Historiques" in the Paris Municipality has established a table or list of streets and houses in Paris which present artistic interest. On the basis of this, when a house is to be destroyed in the formation of a street, or from any other cause, the inspector for the district will inform the department, which will take the necessary steps to protect whatever portion of the property is of any historic or artistic value.——According to the latest information in regard to the work of the General Committee for the 1900 exhibition, all the buildings of the last exhibition will be removed except the Eiffel Tower and the "galerie des machines." The Trocadéro will be divided into pavilions for separate departments of the exhibition; the Fine Arts will be installed in the Palais de l'Industrie, enlarged; behind and connected with it will be two parallel new galleries; and a large bridge thrown across the Seine, opposite the Esplanade des Invalides, will connect the left bank of the river with the Cour la Reine.——The Hôtels de Ville of Libourne and Nevers are to be rebuilt shortly.——We regret to have to record that the aged sculptor Cavalier, of whose dangerous state of health we spoke last week, has died since our last notes were written.

MISCELLANEOUS.

HYDRAULIC POWER, MANCHESTER.—We are informed that on the 30th ult. the new scheme for the supply of hydraulic power by the Manchester Corporation was successfully put into operation; and the first supply of water was given to a set of hydraulic lifts erected by Messrs. Archibald Smith & Stevens, in the new Mosley Hotel and adjoining premises. The new power will be regularly available in a few days.

EASTON, ANDERSON, & GOOLDEN, LIMITED.—The company under this name, recently registered, is an amalgamation of Easton & Anderson, the old-established engineering firm, of London and Erith, with Messrs. W. T. Goolden & Co., electrical engineers, Woodfield Works, Harrow-road, London.

AN OLD HOUSE IN CLOTH-FAIR.—At present there is being demolished at the east end of Cloth-fair a quaint ancient gabled house, which is reputed to have been built four centuries ago. There is a local tradition that the edifice was, a generation or two ago, a notorious thieves' establishment. Although by the gnawing of countless generations of rats, together with the action of damp, the heavy woodwork of the basement of the house is very much dilapidated and decayed, the upper oak, teak, and walnut internal fittings are generally as sound as when first placed in position. We understand that it is intended to erect a factory on the site, but the plans are not yet passed, as, with the object of ultimately widening Cloth-fair when the leases fall in and the houses are demolished, doubtless a modification of the frontage area of the old building will be insisted on in regard to the new erection. Cloth-fair, so dear to the antiquarian, though but little known to the average Londoner, possesses more ancient houses than any street of similar length in the City. Strype says that the quaint lane, of old the mart for cloth, to which merchants from Flanders and Italy used to bring their wares, was "a place generally inhabited by drapers and mercers, and is of some note." A few years ago a local antiquary thus eloquently wrote of Cloth-fair:—"There are narrow tortuous streets, and still narrower courts, about Cloth-fair, where are hidden away scores of old houses, whose projecting eaves and overhanging floors, heavy cumbrous beams, and wattle and plaster walls must have seen the days of the Plantagenets and the earlier Tudors. To the real lover of the past history of our great City, to the pious student of the early times of our English Church, and her struggles after freedom, there is no part of modern London that will better reward a careful survey."—*City Press.*

STUDENTS' PRELIMINARY EXAMINATION, SURVEYORS' INSTITUTION.—Of the candidates who presented themselves at the preliminary examination of the Surveyors' Institution, held concurrently in London and Manchester on the 24th and 25th ultimo, sixty-seven satisfied the examiners.

CITY AND GUILDS OF LONDON INSTITUTE.—The Executive Committee of this Institute have changed the name of the Guilds Central Institution in Exhibition-road to the "Guilds Central Technical College," by which title it will henceforth be known.

A NEW LETTER-CARD.—Messrs. Beeching & Son send us their "Save-time Letter Card," which is perforated so as to be opened with two tearings, instead of the four required for the usual form of letter-card. It seems really an improvement.

A FIRE-ESCAPE.—Mr. J. W. Palmer sends us an illustration and description of his "portable chain fire-escape," which is a light chain ladder to be fixed to staples in the wall inside an upper window, and kept rolled up in a box with the lid made to close over it when not in use, the box being capable of being utilised as a table. When required, the lid of the box is lifted and the ladder lifted over the window-sill and allowed to unroll. Two loose ropes at the foot allow of it being held, and steadied away from the wall by people below, to make it easier of descent. We do not know whether it can quite be said that the "most timid could descend it with safety"; at all events, the "most timid" would dislike the job very much, and women would find the weight of such a rolled-up chain-ladder a very considerable matter to lift out of the box and over the sill. However, it has the merit of being cheap, simple, and with nothing to get out of order, and, as the inventor says, it could be used from back windows where the official fire-escape could not be got.

A SILENT MICA FLAP.—Messrs. Comyn Ching & Co. claim to have got rid of the annoying rattling which occurs from the mica flap ventilators, and which often arises from sudden back-draughts, by interposing inside the mica flap a fixed metal baffle plate pierced with holes which are conical in shape, contracting in the direction of the indraught. They state that while the indraught is helped and accelerated by this strainer with conical apertures, the shape of the apertures, presenting the small end to any back-draught, tends to check it. The device is worth attention.

LONDON STREETS AND BUILDING BILL.—Mr. H. C. Jones and Mr. Geo. Wallace, the solicitor and surveyor respectively to the St. Giles' District Board of Works, have prepared what is called "A Handy Abstract of the Clauses of the Bill," including also an index to the principal provisions, and a table comparing the Bill with the existing law. The latter item is the most useful portion of the work, as it shows at a glance where to look for new legislation. In other respects we do not know that there is any more difficulty in going through the Bill than through the abstract, but it may save a little time in showing more easily where to look for the treatment of special subjects in the Bill.—— A meeting of the North-East London Property Owners' Association was recently held to consider the Bill, when the following resolution was passed: —"That this Association looks with dismay at the proposed Bill 'to Consolidate and Amend the Enactments relating to Streets and Buildings in London,' introduced by the London County Council, and considers some of its provisions unreasonable and confiscatory."

TRAINING CLASSES FOR HOUSE PAINTERS.—A few weeks ago we noticed some efforts which were being made to provide for the painters of London some practical instruction, as a substitute for the unfortunately extinct "apprenticeship." Since then the Painters' Company has been enabled, by the liberal action of the Carpenters' Company, to organise a class of this nature in the building in Great Titchfield-street, which the last-named company has taken and fitted expressly as a training school for the building trades. The class for painters will open on Tuesday, the 13th inst., and will be held each Tuesday and Friday evening from 7 to 9.30. At the same time a course of practical lectures to painters is being given in the old Hall of the Company. The two which have already been delivered were fully attended.

CARPENTERS' COMPANY.—This company has arranged, as usual every year, for a course of six free lectures to be given at their Hall in London Wall on matters more or less directly connected with building work. The first lecture will be given on February 21, by Professor Unwin, on "The Utilisation of Niagara." Other lectures are to be given on five succeeding Wednesdays by Professor Corfield, Mr. T. E. Collcutt, Professor Banister Fletcher, Professor Silvanus Thompson, and Professor Roger Smith.

LEGAL.

IMPORTANT PARTY-WALL SUIT:

ACTION BY THE MAYFAIR PROPERTY CO.

ON Wednesday last week in the Chancery Division, Mr. Justice North delivered judgment in the case of the Mayfair Property Company, Limited, *v.* Johnston, which he had had before him two days. It was an action for partition in respect to the party-wall dividing No. 36 & No. 37, Hyde Park Gate, and there was a motion to commit to prison the plaintiff's architect, Mr. Worley. Mr. Swinfen Eady, Q.C., along with Mr. Peterson, represented the plaintiffs; and Mr. Cozens-Hardy, Q.C., and Mr. Curtis Price were counsel for the defendants.

It may be mentioned that the present suit was the outcome of proceedings that were discussed in the court several times during the course of last year. It arose through the plaintiff's desire to put up a new building in place of the old one (No. 37) and in doing so the wall dividing the two properties suffered, and hence the relations between the parties became strained, and this and a prior action was the result.

After a prolonged argument by counsel, and a volume of evidence being given on both sides,

The learned judge gave judgment, and said the gardens at the back of both houses were separated by a wall; and he decided about a year ago that that wall—if not legally conveyed to either party, the separate owners of the two houses—belonged to the owners of the houses respectively as tenants in common. That was to say, each of them was entitled to the whole of it, each was entitled to a moiety of it, but it was an undivided moiety. The plaintiffs proceeded to erect new buildings, and in doing so interfered with the garden wall. They said that they took the view that the garden wall belonged entirely to them, and they wanted to pull it down for the purpose of erecting—not of restoring—the garden wall as a boundary between the two properties, and to provide a substitute stronger and more substantial; and they accordingly proceeded to pull it down, commencing on March 13, 1893. They completed the new buildings in July last. He thought the present plaintiffs were entitled to partition as provided by the old statutes of Henry VIII., and as to the mode in which it should be carried out he did not think it necessary that they should go through the usual form of inquiry in Chambers. It was desired that the partition should remain by giving to the owners of the land the western half of the wall, divided longitudinally, and the owners of the wall that half east of the wall; and, therefore, the partition should be carried out in that way with the proper conveyances for the purpose. So much as to the action for partition. The counter-claim by the defendants asked for an injunction to restrain the plaintiffs from completing the foundations and footings which encroached upon the defendants' land. Something had been said about an easement, but his Lordship said there was nothing of the kind subsisting. Each of the parties would now have the same control over his own land as if he had no neighbour at all. It was not disputed that there had been a trespass committed by the plaintiffs, and it was trespass underground. The materials placed upon the defendants' land by the plaintiffs became the defendants' property, and the plaintiffs would not be entitled to remove them. He was asked to make a mandatory order for removing them, but he saw no reason for doing it. The remedy was in the hands of the defendants. The encroachment was deliberate and wilful, and he gave the defendants, by way of damages, 15*l.*, which would bear the cost of removal. His Lordship further said it was a case in which the plaintiffs' property might have been sequestrated, or he might have ordered the pulling down of the building. Instead of that he gave them an order for taking proceedings for partition, and they had done this in order to avoid the penalties of having committed a breach of the injunction made against them. In his opinion, therefore, they ought to pay the costs of the action, including the costs of the counter-claim; and as regarded the costs of the motion, the respondents to the motion being in the wrong, would have to pay the costs of it.

Judgment accordingly.

ALLEGED OBSTRUCTION OF THE "OXFORD'S" LIGHTS.

ON Wednesday, in the Court of Appeal, the "Oxford," Limited, *v.* Kirk was a case which came on for hearing before Lord Justice Lindley, Lord Justice Smith, and Lord Justice Kay, on appeal of the plaintiff company, the proprietors of the well-known music hall, from the order of Mr. Justice Kekewich, dated January 26, dismissing a motion to restrain the alleged obstruction of ancient lights. Mr. Marten, Q.C., and Mr. Eustace Smith, appeared for the appellant company and Mr. Rawlins represented the respondent.

Mr. Marten said the injunction refused by Mr. Justice Kekewich was sought to restrain the defendant from erecting, or permitting to remain erected, any hoarding or obstruction calculated to obstruct the ancient lights and windows on the west side of the plaintiff company's building. There was no question at all about the lights being ancient, or as to the obstruction; and the defence of the defendant, who was the adjoining owner, really rested on a document entered into by the lessee of the Oxford—the plaintiffs now being the persons who were the owners in fee. The Counsel proceeded to define the documents connected with the early history of the property, when

Lord Justice Lindley asked whether they were going to take this as the trial of the action.

Finally, on counsel for the respondent undertaking to withdraw the temporary obstruction, it was agreed to send the case back to Mr. Justice Kekewich for trial.

RECENT PATENTS:

ABSTRACTS OF SPECIFICATIONS.

2,330.—VENTILATORS: *A. C. Harris and others.*—According to this invention, a shaft or tube, with its outer end expanded as a bell mouth, is fixed, with a cap, also of bell shape, fitted so as to prevent downward, and create upward, draught. This arrangement also allows the chimney to be swept without inconvenience.

3,283.—VENTILATING COWLS: *W. Davis.*—To prevent down draught, a top or cowl, by means of this invention, fits directly over the top of the chimney or shaft. This "tallboy" is fixed within a cylindrical chamber of a size so much larger that a considerable annular space is formed between the "tallboy" and the chimney. Within the chamber are a number of flap lids of mica, which rise when there is an upward draught, but close when downward pressure of air is upon them.

4,286.—FIREPLACES: *P. Hellmich.*—This invention provides for a steam jet from a boiler affixed near the stove which, discharging into the burning fuel, aids the combustion, and obviates smoke.

4,342.—IRON PAINTS: *M. N. D'Andria.*—This patent relates to the manufacture of red iron paints from proto-sulphate of iron by dry distillation, utilising at the same time the sulphuric and sulphurous acid evolved in the process.

4,497.—SLATE OR TILE ROOF RIDGING: *M. Kellow.*—Instead of ridging made in two or three pieces and secured to the roof by nails, screws, clamps, or cement, the improved ridging, which forms the subject of the patent, is formed in two interlocking parts, and fixed without such aid. The continuity of the sky-line is broken, giving to the ridging a more ornamental appearance.

16,703.—WHITE LEAD: *J. V. Walton.*—This patent relates to improvements in the manufacture of white lead by the Dutch method, so that the grinding and packing of the white lead without injurious effects to the health of the operatives is accomplished.

22,580.—WINDOW FASTENERS: *A. J. Jewers.*—According to this invention, a quick-threaded screw turns in a bush fixed in the meeting-rail, and a corresponding screw and thread enters the second meeting-rail, drawing the two sashes together and completing the fastening.

22,781.—WATER-CLOSET BASINS: *W. T. Allen.*—The basin is furnished with a curved arm, the inlet of which is considerably higher than its outlet. By arranging such a drop in the passage a precipitous rush of water is acquired, and this is made to drop directly upon the top of the soil, which is removed through the trap connected with the neck of the basin. Instead of "revolvers" for surface flushing, the water is made, by the same apparatus, to run directly into the basin, and give an effective flush.

NEW APPLICATIONS FOR LETTERS PATENT.

JANUARY 22.—1,334, W. Brown, Safety Wedge Cap for Securing Tools to Handles, &c.—1,359, T. Strover, Louvre Chimney-Top.—1,362, J. Aldridge, Tile for Roofing and Facing Buildings, &c.—1,366, J. Rumgay, Hanging Doors and Gates.—1,370, A. Hooydonk and H. Hooydonk, Preparation or Compound for Decorating the Interior of Buildings.—1,371, E. Bomford, Drain or Sanitary Pipes for Streets and Roads, and for Draining Purposes Generally, and in Joining the said Pipes.—1,377, C. Morel and A. Heimpel, Apparatus for Crushing Dry or Wet Materials, such as Cements, Lime, Plaster, Alabaster, &c.—1,390, J. Alty, Preventing the Freezing of Water in Pipes laid within Dwelling-houses or other Buildings.—1,393, H. Leigh, Paving-Blocks.

JANUARY 23.—1,404, T. Holliday and J. Robson, Constructing Window-sashes for obtaining Ventilation or reduced Draughts.—1,422, S. Morley, Gulleys.—1,427, A. McAra, Portland Cement.—1,430, B. Reynard, Coping.—1,452, R. Sayer, Sanitation.—1,494, F. Weiss, Fastenings for Doors, &c.

JANUARY 24.—1,519, J. Edwards, Lead Lattice-work.—1,534, J. Clarkson, Wood-screws.—1,445, T. Rees, Lathing for use in the Formation of Partitions, Ceilings, Cornices, &c.—1,547, N. Lorensen, Transportable Glue Stove.—1,579, H. Lanchester, Fire-proof Floors, &c.—1,590, C. Martens, Cowls.

JANUARY 25.—1,631, W. Osborn, Burglar-proof Window and Door Protector.—1,646, H. Burton, Automatic Safety Window-catch.—1,658, A. Soar, Tread for Stairs, &c.—1,679, H. Lake, Water-closets.

JANUARY 26.—1,696, J. Fleming and J. Summëll, Washhand Basins.—1,724, P. Shippobottam, Sliding Windows, Skylights, Doors, &c.—1,727, J. Bull, Panic Bolt for Theatre-doors, &c.—1,733, J. Louvet, Closing, Fastening, and Holding Doors Open.—1,747, The Ariel Company, Limited aud S. Allin, Door Check.

JANUARY 27.—1,799, M. MacGregor, Automatic Closing of Doors.—1,816, J. Hope, Fixing and Making Water-tight Sheets of Glass and other Materials employed in covering Roofs and other Structures.

PROVISIONAL SPECIFICATIONS ACCEPTED.

22,507, J. Stables, Window Fasteners.—22,632, J. Fielding. Joints of Pipes.—23,526, H. Burtlett, Waste-preventing Cisterns and Syphons for Water-closets, &c.—23,608, T. Pennington, Weather Guard for the Bottom of Doors.—23,923, F. Bostel, Flushing Cisterns.—24,965, A. Viale, Closets.—25,027, C. Liney, Drain Pipes.—83, J. Barber, Braces for Cabinetmakers, Carpenters, &c.—265, G. Oulton, Baths, Lavatory Basins, &c.—342, C. Hengst and C. Fox, Union, or Junction for Pipes and Tubes.—343, J. Blakesley, Syphon Cisterns.—395, T. Hill and G. Mackie, Fastenings or Catches for Windows and Doors.—600, J. Taylor, Prevention of Draughts in Dwelling-houses and other Buildings.—655, E. Edwards, Stones for Paving.—693, A. Pickard, Windows.—700, H. Smith, Decorating Walls and Ceilings, and making them Impervious to Damp and Dirt.—756, H. Lake, Step-ladders.—773, J. Wheeldon, Rotary Wood-planes.

COMPLETE SPECIFICATIONS ACCEPTED.

(Open to Opposition for Two Months.)

6,207, A. Cooper, Fastener for Sashes, Casements, &c.
23,818, E. Wielke, Construction of Roofing Tile.

SOME RECENT SALES OF PROPERTY:

ESTATE EXCHANGE REPORT.

JANUARY 29.—By *R. A. Notley:* 1, 2, 3, Oakdale-rd., Leyton, f., 450*l.*; 12, Stafford Ter., Kensington, u.t. 52 yrs., g.r. 20*l.*, 1,300*l.*; 90, Sterndale-rd., u.t. 88 yrs., g.r. 7*l.* 10s., r. 40*l.*, 330*l.*

JANUARY 30.—By *Weston & Son:* No. 147, Newington Butts, f., r. 70*l.*, 1,200*l.*; 11, Myatt-rd., Brixton, u.t. 61 yrs., g.r. 4*l.* 10s., r. 25*l.*, 215.—By *J. Bott:* "Edenhurst," Trinity-rd., Herne Hill, f., 1,700*l.*—By *C. H. Brown:* 15, Frederick-st., Westminster, u.t. 3 yrs., g.r. 10*l.*, r. 40*l.*, 27*l.*—By *C. W. Davies:* 22 to 30, Cornelia-st., Barnsbury, u.t. 36 yrs., g.r. 37*l.*, r. 205*l.* 8s., 645*l.*; 36, Tollington-rd., Holloway, u.t. 55 yrs., g.r. 6*l.* 6s., r. 52*l.*, 355*l.*; a plot of f. land, Uxbridge-rd., Hanwell, 160*l.*

JANUARY 31.—By *White, Berry, & Taylor:* l.g.r. of 794*l.* Chester and Cornwall Ter., Regent's Pk., u.t. 21 to 26 yrs., g.r. 145*l.*, with reversions; also 1, Cornwall Ter., u.t. 26 yrs., g.r. 21*l.*, r. 220*l.*, 14,500*l.*—By *Hunter & Hunter:* l.g.r. of 35*l.*, De Beauvoir-sq., Hackney, u.t. 25 yrs., no g.r., 375*l.*; i.g.r. of 42*l.*, Englefield-rd., u.t. 27 yrs., g.r. 30*l.* 3s., 130*l.*; i.g.r. of 13*l.*, Stamford-rd., u.t. 25 yrs., g.r. 8*l.*, 50*l.*; i.g.r. of 18*l.* 6s., Eagle Lane, Snaresbrook, u.t. 62 yrs., no g.r., with reversion for 11 yrs., 395*l.*; f.g.r. of 13*l.* 10s., Birkbeck-rd., Tottenham, reversion in 85 yrs., 325*l.*; f.g.r. of 28*l.*, Bruce Castle-rd., reversion in 84 yrs., 640*l.*—By *Rushworth & Stevens:* F.g.r. of 24*l.*, Milman's-st., Chelsea, reversion in 74 yrs., 615*l.*; f.g.r. of 48*l.*, Gillray-sq., u.t. 79 yrs., g.r. 6*l.*, 725*l.*; i.g.r. of 63*l.*, Ebury-st., Pimlico, u.t. 30 yrs., g.r. 5*l.*, 895*l.*—By *White, Druce, & Brown:* 51, Hampden-st., Harrow-rd., u.t. 51 yrs., g.r. 5*l.*, r. 30*l.*, 265*l.*; 9, Eamont-st., St. John's Wood, u.t. 10 yrs., g.r. 5*l.*, r. 35*l.*, 50*l.*; 25, Queen-st., Edgware-rd., u.t. 7 yrs., g.r. 4*l.*, r. 30*l.*, 65*l.*—By *R. Tidey & Son:* 101 to 107 (odd), and 135, Blackstock-rd., Highbury, u.t. 72 yrs., g.r. 31*l.* 10s., r. 158*l.*, 1,120*l.*; 1, De Beauvoir-rd., Kingsland, u.t. 39 yrs., g.r. 7*l.* 10s., r. 50*l.*, 300*l.*; 11 to 14, Buckland-st., u.t. 40 yrs., g.r. 22*l.*, r. 144*l.*, 1,290*l.*; 10, Albion-rd., u.t. 45 yrs., g.r. 3*l.*, r. 42*l.*, 285*l.*

FEBRUARY 1.—By *Newbon & Co.:* 4, Ingleby-rd., Holloway, u.t. 56 yrs., g.r. 6*l.*, r. 32*l.*, 265*l.*; 17, 19, 21, Cottenham-rd., u.t. 70 yrs., g.r. 18*l.*, r. 73*l.*, 680*l.*; 45, 47, Cottenham-rd., u.t. 70 yrs., g.r. 12*l.*, r. 65*l.*, 375*l.*: 23, De

COMPETITION, CONTRACTS, AND PUBLIC APPOINTMENTS.

COMPETITION.

Nature of Work.	By whom Advertised.	Premiums.	Designs to be delivered.
*Six-Cell Destructor	Moss Side Loc. Bd.	.....	Mar. 1

CONTRACTS.

Nature of Work or Materials.	By whom Required.	Architect, Surveyor, or Engineer.	Tenders to be delivered.
Drainage Works, East Finchley	Islington Burial Board	T. H. Barfield	Feb. 13
Two Footbridges, Cliff's-road	Arbroath (N.B.) T. C.	Carver & Symon	do.
School Work, Denham-terrace	Wallsend School Board	W. Hope	do.
Cast-iron Pipes (1,516 yards)	Berwick-upon-Tweed U.S.A.	Leslie & Reid	Feb. 14
Cast-iron Pipes, Cardiff	Rhymney Valley (Glam.) Gas & Water Co.	T. Rees	do.
Eleven Houses, Crabtree-street, Colne, near Burnley	Miles Higgin	H. Holgate	do.
Road Construction, Davyhulme	Manchester Corp.	J. Allison	do.
Houses and Shops, Newtownards-road, Belfast	Thos. Cairns	F. W. Lockwood	do.
*Works and Materials	St. Mary, Battersea, Vestry	J. T. Pilditch	do.
*Broken Granite	Southend-on-Sea Corp.	*Official*	do.
*Granite Kerb and Pitchers	Brighton Town Comn.	F. J. C. May	Feb. 15
*Cleaning, &c. Works, S.W. Hospital	Met. Asylums Board	T. W. Aldwinckle	do.
Additions to Lower Mills, Rawtenstall	D. Whitehead & Sons, Lim.	J. H. Atkinson	do.
Street Works, Greystoke-street, &c.	Stockport Corp.	do.	do.
Church, Blythe-street, Belfast	.....	S. P. Close	do.
Business Premises, Morecambe	.....	Rycroft & Firth	do.
House and Offices, Almondbury, Huddersfield	.....	J. Kirk & Sons	do.
Stoneware Pipe Sewer, Laira Green	Plympton (Devon) R.S.A	*Official*	do.
*Chimney Stack, Derby	M. Ry. Co.	do.	do.
*Pulling-down Two Houses	St. John's (Hampstead) Guardians	do.	do.
Road Works	Alnwick Highway Bd.	G. Short	Feb. 16
*Various Works	Stoke Newington Ves.	*Official*	do.
Granite Road Metal, Stamford	Kesteven C. C.	J. W. Watson	Feb. 17
Three Houses, Halifax	.....	Medley Hall	do.
Paving Setts, Limestone, &c.	Blackburn Corp.	J. B. M'Callum	do.
Alterations to Schools, Armley, Leeds	Common-right Trstees	C. F. Wilkinson	do.
Boundary Wall, Gates, &c. New Chesterroad	Birkenhead Corp.	C. Brownridge	Feb. 19
*Supply of Materials	Hendon Local Board	S. S. Grimley	do.
*Supply of Materials	Birkdale Local Board	J. H. Fairbarn	do.
Cattle Market	Wainfleet All Saints' (Lincs.) Market Co.	Jas. Martin & Son	do.
Engine and Boiler House, Cottages, &c. Farnsfield	Newark Corporation	H. Rofe	do.
Store and Two Houses, Cemetery-road	Bradford Prov. Indus. Soc. Lim.	Rycroft & Firth	do.
Alterations to Police Station, Watford	Standing Joint Com.	U. A. Smith	do.
*Eight Concrete Groynes	Southend-on-Sea Corp.	C. T. Copley	do.
*Road and Sewer Repairs, &c. Broken Granite	Limehouse Bd. of Wks.	*Official*	do.
Wesleyan Chapel, Chorley, Lancs.	.....	W. H. Dinsley	Feb. 20
*Washhouse at Workhouse	St. Marylebone Guar.	A. Saxon Snell	do.
*Repair of Private Roads	Borough of Croydon	*Official*	do.

CONTRACTS—*Continued.*

Nature of Work or Materials.	By whom Required.	Architect, Surveyor, or Engineer.	Tenders to be delivered.
Sewers, Lake-road, &c.	Portsmouth U.S.A.	*Official*	Feb. 20
*Dressing Room and Shelter, Finsbury-park	LondonCounty Council	do.	Feb. 21
Hospital	Whitehaven Trustees of Town and Harbour	do.	do.
Additions, &c. to Workhouse	Chichester Union	Inkpen & Swinburne	do.
School Buildings, Pontycymmer (S. Wales)	Llangelnor Sch. Bd.	P. J. Thomas	do.
Paving, Flagging, &c. Vernon and other Streets	Todmorden Loc. Bd.	H. Shaw	do.
Refuse Destructor (Six Cells), Egremont, Cheshire	Wallasey Loc. Bd.	A. Salmon	Feb. 22
*Hot Water or Steam Boiler	St. Mary Islington	W. Smith	do.
*Sewerage Works	Godalming U.S.A.	*Official*	do.
*Works and Materials	Islington Vestry	do.	do.
*Tar-Paving Works	Wood Green Loc. Bd.	C. J. Gunyon	Feb. 23
*Works and Materials	Hornsey Loc. Bd.	T. De Courcy Medde	do.
Library Buildings, Ton Pentre, Glam.	Maerdy and Eastern Pits of the Ocean Collieries	J. Rees	do.
Schools, Moorfield, Praze, Cornwall	Crowan School Board	Carah & Son	Feb. 24
*Broken Granite	Essex County Council	Percy J. Sheldon	do.
*Sinking Well, &c.	Rochford U.R.S.A.	J. Mansbergh	Feb. 26
Additions to Several Schools	Mynyddislwyn (Mon.) School Board	Geo. Rosser	do.
Three Chapels, at Cemetery	Hyde (Cheshire) Corp.	Messrs. Beaumont	do.
*Idiots' Block	Hants County Asylum	B. S. Jacobs	do.
*Works and Materials	Bath U.S.A.	*Official*	Feb. 27
*York Paving and Granite Kerb	St. Saviour's Bd. of Wks.	do.	do.
Timber Wharf, Penrose Quay	Cork Harbour Com.	W. Donegan	do.
*Making-up Roads	Tottenham Loc. Bd.	P. E. Murphy	do.
*Underground Conveniences, Billingsgate Sewerage Works	Commrs. of Sewers	*Official*	do.
	Skipton U.R.S.A.	Barber, Hopkinson & Co.	Mar. 2
*Enlargement of Schools, &c. &c.	Chigwell Sch. Bd.	E. Egan	Mar. 3
*Tar Paving Works	do.	do.	do.
*Town Hall and Public Offices	Llanelly Local Board	W. Griffiths	Mar. 10
*School Buildings, &c.	West Ham Sch. Bd.	Newman & Jacques	Mar. 13
*Iron Footbridge	Bridgnorth Corp.	*Official*	Mar. 31
*Infirmary Buildings	Guildford Union	Peak & Lunn	No date
Additions, &c. to Friendship Inn, Glossop	.....	J. H. Burton	do.
Re-building Quarryman's Inn, Edenfield, Bury (Lancs.)	Jno. Baxter	T. Nuttall	do.
Nelson Memorial Church, Shankhill-road, Belfast	.....	W. J. Gilliland	do.
Church, Tarbert, Loch Fyne	.....	Alex. Petrie	do.
Culvert, Little Ponton, near Grantham	.....	H. Kirk	do.
Schools, Keynsham, Bristol	.....	E. H. Lingen Barker	do.
*Twelve Cottages, and Completion of Others, Abertillery	.....	Bishop & Pritchett	do.

PUBLIC APPOINTMENTS.

Nature of Appointment.	By whom Advertised.	Salary.	Applications to be in.
*Quantity Surveyors (several)	Met. Asylums Board	1 per cent. on cost of work	Feb. 14
*Superintendent at Pumping Station	Epping R.S.A.	.....	Feb. 15
*Inspector of Works	Plymouth Corp.	3*l.* per week.	Feb. 26

Those marked with an Asterisk (*) are advertised in this number. *Competition, p.* iv. *Contracts, pp.* iv., vi. *and* viii. *Public Appointments, pp.* xviii. *and* xxi.

Beauvoir-rd., Kingsland, u.t. 40 yrs., g.r. 6*l.* 6s., r. 45*l.*, 375*l.*; 99, 101, 103, Melbourne Grove, Dulwich, u.t. 81 yrs., g.r. 19*l.*, r. 64*l.*, 500*l.*; 441, Southwark Park-rd., Bermondsey, u.t. 52 yrs., g.r. 6*l.*, 175*l.*: 45, Alexandra-rd., Wimbledon, u.t. 84 yrs., g.r. 8*l.*, r. 40*l.*, 350*l.*

FEBRUARY 2.—By *Jones, Lang, & Co.*; 38, Cheapside, City of London, u.t. 1,750 yrs., no g.r., r. 325*l.*, 9,300*l.*—By *Hill & Weaver*: 60, Queen's Crescent, Kentish Town, u.t. 56 yrs., g.r. 2*l.*, r. 80*l.*, 850*l.*

[*Contractions used in these Lists.*—F.g.r. for freehold ground-rent; l.g.r. for leasehold ground-rent; i.g.r. for improved ground-rent; g.r. for ground-rent; r. for rent; f. for freehold; c. for copyhold; l. for leasehold; e.r. for estimated rental; u.t. for unexpired term; p.a. for per annum; yrs. for years; st. for street.; rd. for road; sq. for square; pl. for place; ter. for terrace; cres. for crescent; yd. for yard, &c.]

MEETINGS.

FRIDAY, FEBRUARY 9.

Sanitary Institute (Lectures and Demonstrations for Sanitary Officers).—Mr. J. Wallace Peggs on "Water Supply, Drinking Water, Pollution of Water." 8 p.m.

Junior Engineering Society.—Mr. A. H. Dykes on "The Construction and Working of Electro Motors." 8 p.m.

SATURDAY, FEBRUARY 10.

Royal Institution.—Lord Rayleigh, M.A., on "Light, with Special Reference to the Optical Discoveries of Newton." I. 3 p.m.

Sanitary Institute (Lectures and Demonstrations for Sanitary Officers).—Visit to Express Dairy Company's Farm, College Farm, Finchley. 3 p.m.

Queen's College, Cork.—Mr. Arthur Hill on "The History of Architecture." V. 3 p.m.

MONDAY, FEBRUARY 12.

Royal Institute of British Architects. — (1) The President, Mr. J. Macvicar Anderson, to move:—"That the Council of the Institute be instructed to take the necessary steps to lodge a petition to the House of Commons against a Bill to Consolidate and Amend the Enactments relating to Streets and Buildings in London'—the suggested short title of which is 'The London Building Act, 1894'—in order to secure for the Institute a *locus standi* to be heard on the principles and details of the proposed measure before any Select Committee that may be appointed for the purpose." (2) The President to announce the name of the person the Council propose to submit to Her Majesty the Queen as a recipient of the Royal Gold Medal, 1894. (3, under the management of the Art Standing Committee) Papers on "Mosaics and Fresco," by Messrs. C. Harrison Townsend, James C. Powell, G. Salviati, and N. H. J. Westlake.

Royal Academy of Arts.—Professor Aitchison, A.R.A., on "The Advancement of Architecture." V. 8 p.m.

Society of Engineers.—(1) The President for the past year, Mr. W. A. McIntosh Valon, J.P., will present the Premiums awarded for Papers read during the year; (2) The President for the year 1894, Mr. G. A. Goodwin, will deliver his Inaugural Address. 7.30 p.m.

Clerks of Works' Association.—Annual Dinner, Holborn Restaurant, Mr. James Brooks, F.R.I.B.A., in the Chair. 6.30 p.m.

Society of Arts (Cantor Lectures).—Mr. Frank Clowes on "The Detection and Measurement of Inflammable Gas and Vapour in the Air." IV. 8 p.m.

TUESDAY, FEBRUARY 13.

Institution of Civil Engineers. — Further discussion on Mr. Boverton Redwood's paper on "The Transport of Petroleum in Bulk." 8 p.m.

Sanitary Institute (Lectures and Demonstrations for Sanitary Officers).—Mr. Keith D. Young on "Sanitary Building Construction." 8 p.m.

Society of Arts (Applied Art Section).—Mr. Horace Townsend on the "Modern Development of Illustrated Journalism." 8 p.m.

WEDNESDAY, FEBRUARY 14.

Architectural Association Camera Club.—Mr. J. L. Robinson, R.H.A., on "Architectural Photography." 8 p.m.

Society of Arts.—Mr. Henry Robinson on "The St. Pancras Electric Light Installation." 8 p.m.

Sanitary Institute (Lectures and Demonstrations for Sanitary Officers).—Visit of Inspection in the Parish of St. George's, Hanover-square. 2 p.m.

Northern Architectural Association.—Mr. R. Hedley on "Wood-carving." 7.30 p.m.

Institution of Civil Engineers of Ireland (35, Dawson-street, Dublin). 8 p.m.

THURSDAY, FEBRUARY 15.

Royal Academy of Arts.—Professor Aitchison, A.R.A., on "The Advancement of Architecture." VI. 8 p.m.

Society of Antiquaries.—8.30 p.m.

Stepney Meeting House (Men's Union Club Hall, Garden-street).—Mr. R. Williams, A.R.I.B.A., on "Light, Air, and Space in Relation to Workmen's Dwellings and Workshops." Illustrated. 8.15 p.m.

FRIDAY, FEBRUARY 16.

Architectural Association.—Mr. J. L. Robinson on "The Last Three A. A. Excursions." Illustrated. 7.30 p.m.

Sanitary Institute (Lectures and Demonstrations for Sanitary Officers).—Professor W. H. Corfield, M.A., on "Sanitary Appliances." 8 p.m.

Institution of Civil Engineers (Students' Meeting).—Mr. Walter Beer on "Ship Slipways, having special reference to the Dover Slipway." 7.30 p.m.

Painters' Hall.—Mr. W. Fourniss on "The Processes of House Painting." III. 8 p.m.

SATURDAY, FEBRUARY 17.

Sanitary Institute (Lectures and Demonstrations for Sanitary Officers).—Visit to Croydon Water-works and Beddington Sewage Farm, Croydon. 2 p.m.

Royal Institution.—Lord Rayleigh, M.A., on "Light; with Special Reference to the Optical Discoveries of Newton." II. 3 p.m.

Queen's College, Cork. — Mr. Arthur Hill on the "History of Architecture." VI. 3 p.m.

PRICES CURRENT OF MATERIALS.

TIMBER.

Greenheart, B.G.	ton	9/0/0 9/0/0
Teak, E.I.	load	9/10/0 15/10/0
Sequoia, U.S.ft.cu		2/3 2/6
Ash, Canada load		2/10/0 3/15/0
Birch, do.		2/10/0 3 10 0
Elm, do.		3/5 0 4/10/0
Fir, Dantsic, &c.		1/5/0 2/10/0
Oak, do.		2/15 0 5/0/0
Canada		5/10/0 7/0/0
Pine, Canada red		2/15/0 3 5/0
Do. Yellow		2/5/0 4/10/0
Lath, Dantsic, fath		4/10/0 5/10/0
St. Petersburg		5/0/0 6/10,0
Wainscot, Riga, &c., log		2/5/0 4/10/0
Odessa, crown		2/5/0 4 10 0
Deals, Finland		
2nd & 1st std	100	8/0/0 10/10/0
Do. 4th & 3rd		7/10,0 8/0/0
Do. Riga		7/10/0 9/0/0
St. Petersburg, 1st yellow		10/0/0 13/10/0
Do. 2nd yellow		8/0/0 9/0/0
Do. white		8/10 0 11/0 0
Swedish		8/0/0 16 0/0
White Sea		8/0/0 26/10/0
Canada, Pine 1st		22/10 0 29/10 0
Do. do. 2nd		17/0/0 18/10 0
Do. do. 3rd, &c.		7/10/0 10/10/0
Do. Spruce, 1st		9 0/0 11/0/0
Do. do. 3rd & 2nd		6/10/0 7/15/0
New Brunswick		6/0/0 7/5 0
Battens, all kinds		3/0/0 15 0/0
Flooring boards, sq., 1 in. prep.		
1st		0/10/6 0/15/6
Do. 2nd		0/7/6 0/13/0
Other qualities		0 5/3 0/7 0
Cedar, Cuba	ft.	/3½ /4½
Honduras, &c.		/3 /4½
Mahogany, Cuba		/3½ /6
St. Domingo, cargo av.		/3 1/6
Mexican do.	do.	/3 /4
Tobasco do.	do.	/3½ /6
Honduras do.	..	/3½ /5½
Box, Turkey	ton	4/0/0 13/0/0
Rose, Rio		8 0/0 18/0/0
Bahia		7/0/0 17/0/0
Satin, St. Domingo		0/0/5 0/1/0

TIMBER (*continued*).

Satin, Porto Rico	0/0/6	0/1/6
Walnut, Italian	0/0/3½	0/0/7

METALS.

Iron—Pig, in Scotland	ton	2/3/4½ 0/0/0
Bar, Welsh, in London		5/17/6 6/0/0
Do. do. at works in Wales		5/7/6 5/10/0
Do. Staffordshire, in London		6/0/0 6/10/0
COPPER—British cake and ingot		43/10/0 44/0/0
Best selected		44/10/0 45/0/0
Sheets, strong		52/0/0 0/0/0
Chili, bars		41/3/0 41/8/0
YELLOW METAL	lb	0/0/4½ 0/0/5
LEAD—Pig, Spanish	ton	9/3/9 9/5/0
English com. brands		9/7/6 0/0/0
Sheet, English, 6 lbs. per sq. ft. and upwards		11/0/0 0/0/0
Pipe		11/10/0 0/0/0
ZINC—English sheet	ton	19/10/0 0/0/0
Vieille Montagne		20/0/0 0/0/0
TIN—Straits		70/15/0 71/5/0
Australian		71/2/6 71/12/6
English Ingots		75/0/0 75/10/0
Banca		75/0/0 75/10/0
Billiton		73/0/0 73/10/0

OILS.

Linseed	ton	20/0/0 20/5/0
Cocoanut, Cochin		32/10/0 33/0/0
Do. Ceylon		24/5/0 24/10/0
Palm, Lagos		25 0/0 0/0/0
Rapeseed, English pale		23'0/0 23/10/0
Do. brown		21/10/0 0/0/0
Cottonseed ref.		21/15/0 22/0/0
Oleine		22/0/0 24/0/0
Lubricating, U.S.		4/0/0 5 0/0
Do. refined		5/0/0 12 0 0
TAR—Stockholm	barrel	0/19/6 1/0/0
Archangel		0/12/6 0/0/0

TENDERS.

[Communications for insertion under this heading should be addressed to "The Editor," and must reach us *not later than* 10 *a.m. on Thursdays.*]

ACKLINGTON.—For alterations to farm buildings, Hazon, for Mr. W. E. Lawson. Mr. George Reavell, junr., architect, Alnwick:—

Mason.—A. Douglas, Bondicar, Acklington £99 0 0
Joiner.—William Steel, Felton 72 0 0

ALNWICK.—For additions and alterations to the "Star" Hotel, for Mr. G. S. Smart. Mr. Geo. Reavell, jun., architect, Alnwick:—

Mason.—W. Weatherit, Alnwick £84 17 6
Joiners.—J. Short & Son, Alnwick 97 15 0
Slater.—W. Dixon, Alnwick 20 15 0
Plasterer.—W. Dixon, Alnwick 27 13 7
Plumbers.—Wilkin & Dickman, Alnwick 14 10 0
Painter.—J. Percy, Alnwick 5 2 6

ALVERSTOKE (Hants).—For proposed new wards and other additions to the Alverstoke Union. Mr. Harry A. F. Smith, architect, Gosport:—

W. M. Rapley & Son	£1,400	J. Dugan	£1,200
Crockerell	1,300	J. Croad	1,300
Laur & Sons	1,283	C. M. Dash*	1,189
Lane & Son	1,249	*Accepted.	

BELFAST.—For the erection of a terrace of houses, Cliftonville. Mr. Henry Seaver, architect, 128, Royal Avenue, Belfast:—

Allen	£2,434	W. J. Lester	£2,357
Campbell & Lowry	2,421	James Kidd	2,340
Matthew Hearst	2,390	McRoberts & Young	2,275
William Kerr	2,360		

BLACKPOOL.—Accepted for making and fixing all shop fronts, windows, &c., in walnut, St. John's Market, for the Corporation. Mr. J. Wolstenholme, Borough Engineer, Town Hall, Blackpool:—

Hartley, Blackpool £573 0 0

BONNYRIGG (N.B.).—Accepted for providing and laying about 200 yards of 21-in. drain-pipes, for the Commissioners. Mr. R. Leithead, Burgh Surveyor, 74, High-street, Bonnyrigg:—

Thomas Cumpstie, Dalkeith £112 0 0

BOURNEMOUTH.—For kerbing, channelling, and draining portions of the main road, Pokesdown. Mr. Jas. Robinson, County Architect and Surveyor, 13, Southgate-street, Winchester:—

Adams	£848 0 0	Saunders & Co.	£643 19 7
Leeks	805 13 0	L. Ayles & Son, Ringwood (accepted)	590 0 0
James	761 15 0	Locks	520 15 3
Stickland	683 1 6		

BOXTED.—For alterations to the C. E. Schools, Boxted, Essex. Mr. J. W. Start, architect, Cups Chambers, Colchester and Harwich:—

Garwood	£455 10	Saunders & Son, Dedham (accepted)	345 0
Beaumont	390 0		
Deaves	360 0		

BROMLEY (Kent).—For the construction of 490 yards pipe sewer, and other works, North Cray, for the Rural Sanitary Authority. Messrs. Alfred Williams & Son, engineers, 18, Great George-street, London, S.W.:—

Thomas Adams	£309 14 4	Stebbings & Pannett	£229 0 0
George Osenton	255 17 0	Brewer & Rackham	226 5 0
John Jackson	247 16 6	Mid-Kent Contracting Co., Beckenham, Kent (accepted)	201 11 3
Porter & Harrison	241 5 2		
Laydon & Crawford	239 0 2		

CHELTENHAM.—For supplying and laying 1,770 yards pipe-sewers, manholes, &c., for the Rural Sanitary Authority. Mr. G. B. Witt, C.E., Leckhampton:—

Peattie & Axtell	£950 0 0	Cruwys & Hol-brough	£707 0 0
H. V. Robinson	785 0 0	H. Weidon	640 0 0
Thos. Adams	768 13 3	J. Strachan	614 0 0
J. H. Firbank	758 2 2	John White, Junr.	574 5 9
Geo. Campin	743 12 9	Mark Williams, 10, Granville-street, Cheltenham*	573 2 1
D. H. Porter	735 0 0	*Accepted.	
Jones Fitzmaurice	730 0 0		
Stephen Ambrose	717 18 4		
A. & W. N. Meston	716 4 8		

CROXLEY GREEN (Herts.).—For new boys' schools and master's residence at Croxley Green, near Rickmansworth, Herts., for the Governors of the Church Schools. Mr. Melville S. Ward, architect, 13, Gt. James-street, W.C.:—

Holland	£1,592 7 4	Waterman	£1,294 0 0
G. Brightman	1,459 0 0	G. Darvell	1,273 8 9
Turner & Co.	1,325 0 0	Brown & Son	1,130 0 0
Clifford & Gough	1,325 0 0		

[Architect's approximate estimate, £1,150 0 0.]

DERBY.—For the enlargement of school buildings, St. James's-road, for the School Board. Mr. James Wright, architect, Irongate, Derby. Quantities by the architect:—

Ford & Co.	£9,530 0 0	A. Smith	£8,894 6 8
J. Parker	9,484 0 0	E. Wood	8,834 11 0
Walker & Slater	9,410 0 0	H. Vernon	8,755 9 0
J. T. Tomlinson & Co.	9,365 0 0	W. Eaton	8,687 3 0
G. Wagg	9,082 0 0	A. Brown, Great Northern-road, Derby (accepted)	8,576 0 0
H. Chattle	8,962 9 0		

DUNGIVEN (Ireland).—For the execution of certain water supply works, pipes, &c., for the Limavady Union Guardians. Mr. L. L. Maccassey, C.E., Belfast:—

Raynor	£851 13 2	Stewart & Co. (material only)	£438 8 6
D. Christie	839 6 2	R. Rogers, Limavady (accepted)	739 8 2
Williamson & Co.	777 19 6		
McLarnon	770 0 0		
Deeny	769 0 0		

EPSOM.—For constructing reservoir and laying cast-iron water-mains, for the Epsom Local Board. Mr. C. P. King, Engineer:—

B. Cooke & Co., Battersea £6,000 0 0

* Accepted, subject to the approval of the Local Government Board.

HAMPTON WICK.—For the supply of granite, for the Hampton Wick Local Board:—

	Description of Granite.	s.	d.	
L. Sommerfeld	Belgian	12	1	per ton
E. J. Van Praagh & Co.	Leicester	14	9	,,
The Croft Granite Company		12	6	,,
C. M. Manuelle	Quenast	13	0	,,
C. M. Manuelle	Belgian	11	9	,,
Muir & Co.	Guernsey	15	0	,,
R. L. & J. Fennings, London Bridge, S.E. (accepted)	,,	14	0	per yd.
W. Griffiths	,,	14	4	per ton
Nowell & Robson	,,	14	6	,,
S. Trickett		14	1½	,,
Grimley & Son	Leicester	12	11	,,
R. Beauchamp	Mendip	8	10	,,
G. le Maitre	Guernsey	15	5	,,
A. & F. Manuelle	,,	15	0	,,
R. Norwood Tyre	Hartshill	13	7	,,
E. Downs	Quenast	13	5	,,

Brick Rubble.

	Per cubic yd. s.	d.
Wills & Packham, Sittingbourne, Kent (accepted)	3	0
A. J. Knight	3	2
H. Dalby	3	6

HENLEY-IN-ARDEN.—Accepted for the erection of a Wesleyan Chapel. Mr. Thos. T. Allen, architect, 2, Broad-street, Stratford-on-Avon. Quantities by Mr. H. H. Allen, Swan Buildings, Edmund-street, Birmingham:—

J. W. Lord, Henley-in-Arden £566 9 9

ILFORD (Essex).—Accepted for the erection of a Congregational Church. Mr. W. K. Ansell, architect, 88, London Wall, E.C.:—

Wm. Wells, 15, Crouch Hill, N. £2,274 6 0

KILKENNY (Ireland).—For the execution of certain works at the Roman Catholic chapel workhouse, for the Union Guardians. Mr. W. Fitzgerald Barry, architect, Patrick-street, Kilkenny:—

Reade & Sons	£147 0 0		
John Moorissey, Watkin-street, Kilkenny*	132 10 0		

*Accepted.

KINGSTON-ON-THAMES. — For addition to the Female Infirmary at the Kingston Union, for the Guardians. Mr. W. H. Hope, architect, Kingston:—

Rochelle, Gover, & Smith	£8,126 9 11	Oldridge & Sons	£6,949 0 0
Yerbury & Sons	8,000 0 0	J. O. Richardson	6,929 0 0
Turtle & Appleton	7,853 0 0	Dorey & Co.	6,871 0 0
Cooke & Co.	7,617 0 0	Lane & Son	6,730 0 0
Tompsett & Kingham	7,236 0 0	Botterill & Son	6,517 0 0
Wall & Co.	7,198 0 0	Lorden & Son, Upper Tooting (accepted)	6,487 0 0
Allen & Sons	7,125 0 0	C. Jobbins	6,282 0 0
W. H. Gaze	6,980 0 0	C. Jackson	5,454 0 0
D. Judd	6,958 12 6		

LEICESTER.—For erecting house, with stabling and coach-house, at Stoneygate, Leicester, for Mr. A. J. Ewen. Mr. James Ransome, architect, 11, Argyll-place, W. Quantities by Mr. Henry Riley, 8, Buckingham-street, Adelphi, W.C.:—

S. & E. Bentley	£1,790	T. Duxbury & Son	£1,635
H. T. & W. Chambers	1,770	J. E. Johnson (accepted)	1,614
T. Bland & Son	1,765	[All of Leicester.]	

LONDON.—For the enlargement of the Hughes' Fields School, Deptford, by 400 places, and for the provision of cookery and laundry centres, for the School Board for London. Mr. T. J. Bailey, Architect:—

		If brickwork be built in cement, add
J. Longley & Co.	£13,683 0 0	£231 0 0
Foster & Dicksee	13,518 0 0	162 0 0
J. Shillitoe & Son	13,142 0 0	207 0 0
W. Downs	12,859 0 0	217 0 0
B. E. Nightingale	12,597 0 0	232 0 0
Holliday & Greenwood	12,587 0 0	222 0 0
H. Lovatt	12,532 0 0	185 0 0
Hart Bros.	12,389 0 0	254 0 0
E. Lawrance & Sons	12,275 0 0	258 0 0
C. Cox	12,031 0 0	208 0 0
J. & M. Patrick, Rochester	11,851 0 0*	231 0 0*

* Recommended for acceptance by the Works Committee.

LONDON.—For rebuilding all the offices in connexion with the Bromley Hall-road School, Bromley, and also for providing a new system of drainage, for the School Board for London. Mr. T. J. Bailey, Architect:—

Williams & Son	£1,395 0 0	Norris & Luke	£1,284 0 9
W. Neil	1,361 0 0	Calnan & Co.	1,248 0 0
McCormick & Sons	1,346 0 0	E. Triggs, Clapham*	1,200 0 0
Taylor & Son	1,337 0 0	J. T. Robey	1,016 15 0

* Mr. Robey subsequently asked to be allowed to withdraw his tender owing to an error of £100 10s. having been made in the quantities. As a matter of emergency, the second lowest tender, that of Mr. E. Triggs, amounting to £1,200 was accepted.

LONDON.—For enlargement of the Broomsleigh-street School, West End, Hampstead, by 198 places, for the School Board for London. Mr. T. J. Bailey, Architect:—

		If brickwork be built in cement, add
T. L. Green	£3,354 0 0	£60 0 0
T. Boyce	3,271 0 0	60 0 0
W. Dabbs	3,130 0 0	65 0 0
Killby & Gayford	3,125 0 0	61 0 0
J. Allen & Sons	3,051 0 0	25 0 0
D. Charteris	2,984 0 0	53 0 0
Foster & Dicksee	2,953 0 0	45 0 0
E. Lawrence & Sons, Wharf-road, City-road*	2,944 0 0	52 0 0

* Recommended by the Works Committee for acceptance.

LONDON.—For the enlargement of the Honey-well-road School, Wandsworth Common, by 400 places, for the School Board for London. Mr. T. J. Bailey, Architect:—

		If brickwork be built in cement, add
J. Willmott & Sons	£5,731 0 0	£100 0 0
F. & H. F. Higgs	4,826 0 0	90 10 0
J. Marsland	4,800 0 0	85 0 0
Hart Bros.	4,791 0 0	85 0 0
J. & M. Patrick	4,791 0 0	106 0 0
Holloway Bros.	4,783 0 0	85 0 0
Co-operative Builders, Limited	4,772 0 0	90 0 0
H. Lovatt	4,683 0 0	85 0 0
W. Downs	4,558 0 0	53 0 0
Stimpson & Co., Brompton-road, S.W.*	4,424 0 0	127 0 0

* Recommended by the Works Committee for acceptance.

LONDON.—For erecting a covered playground for the Infants' department of the Rutland-street School, Mile End Old Town, for the School Board for London. Mr. T. J. Bailey, Architect:—

W. Martin	£226 0 0	H. Eady	£178 17 1
J. T. Robey	224 0 0	A. Salter	164 0 0
T. White & Son	210 0 0	Jones & Groves*	160 0 0
W. J. Hack	194 0 0		

* Recommended by the Works Committee for acceptance.

LONDON. — For erecting new water-closets for the girls' and infants' departments of the Goodson-road School, Rotherithe, for refitting the boys' offices and for providing a partly new system of drainage at the same time, for the School Board for London. Mr. T. J. Bailey, Architect:—

F. Curtis	£1,196	F. G. Minter	£967
Holliday & Greenwood	1,093	L. Whitehead & Co.	940
B. E. Nightingale	1,066	W. & H. Castle, Southwark Bridge-road*	889
Lathey Bros.	1,049		

* Recommended by the Works Committee for acceptance.

LONDON.—For provision of Deaf and Laundry Centres in connexion with the Catherine-street School, Hoxton, for the School Board for London. Mr. T. J. Bailey, Architect:—

		If brickwork be built in cement, add
W. Neil	£2,846 0 0	£46 0 0
W. Gregar & Son	2,410 0 0	65 0 0
J. Grover & Son	2,197 0 0	60 0 0
W. Downs	2,110 0 0	56 0 0
E. Lawrance & Sons	1,970 0 0	50 0 0
G. S. S. Williams & Sons	1,913 0 0	53 0 0
E. Houghton & Son, Stroud Green	1,783 0 0*	45 0 0*

* Recommended for acceptance by the Works Committee.

LONDON.—For enlarging the boys' and girls' offices in connexion with the Fairfield-road School, Bow, for refitting the existing boys' offices with new stoneware troughs and automatic flushing tanks, for rebuilding the infants' offices, and also for carrying out drainage works at the same time, for the School Board for London. Mr. T. J. Bailey, Architect:—

Staines & Son	£1,048 0	Williams & Son	£884 0
Peattie & Axtell	1,040 10	White & Son	833 0
W. Neil	1,007 16	J. T. Robey, Bow-road, E.*	737 0
Houghton & Son	948 0		
McCormick & Sons	888 0		

* As a matter of emergency the lowest tender has been accepted by the Works Committee.

LONDON.—The London School Board, on December 21, 1893, agreed to accept the tender of Mr. N. Lidstone, of No. 96, Blackstock-road, N., amounting to £13,924, for enlarging the Thornhill-road School, Islington, by 400 places, and also for erecting a cookery centre and a schoolkeeper's house, and carrying out other works, Mr. T. J. Bailey being the Architect. Mr. Lidstone has since stated that, after careful consideration, he is unable to execute the work at the amount of his tender, and asks permission to withdraw it. The Committee have ascertained that Messrs. John Grover & Son, who were the second lowest tenderers, are prepared to sign the contract at the amount of their tender, viz., £13,934. The Committee accordingly recommend that the resolution of the Board for the acceptance of Mr. Lidstone's tender should be rescinded, and that the second lowest tender should be now accepted.

LONDON.—For enclosing, draining, and tar-paving additional land acquired for the Cator-street School, Peckham, and also for re-erecting the covered playground of the boys' department, for the School Board for London. Mr. T. J. Bailey, Architect:—

W. V. Goad	£475	Holliday & Greenwood	£437
W. Akers & Co.	407	A. Black & Son	395
F. & H. F. Higgs	453	L. Whitehead & Company, Clapham-road, S.W.	335
J. Smith & Sons	445		

* Recommended by the Works Committee for acceptance.

LONDON.—For levelling and other works at the proposed Brook Hospital, Shooters' Hill, for the Managers of the Metropolitan Asylums Board. Mr. T. W. Aldwinckle, architect, 1, Victoria-street, Westminster, S.W.:—

Holme & King	£15,370 3 6	Kirk & Randall	£8,796 1 9
G. Osenton	13,275 3 0	R. Cooke & Co.	8,578 3 0
F. & H. F. Higgs	11,250 2 6	Fry Bros.	8,420 3 3
H. Wall & Co.	9,823 2 6	G. Neal	7,737 2 0
J. Bowles	9,400 2 6	Pauling & Elliott (accepted)	6,430 2 4½
C. Wall	9,354 0 0		

LONDON.—For the erection of premises, No. 8, Powis-street, Woolwich, for Messrs. Matthews. Mr. H. H. Church, architect, William-street, Woolwich. Quantities by Mr. W. Whincop, 44, Norcott-road, Stoke Newington, N.:—

Bishop & Webb	£1,188 0 0	Chapman	£1,025 0 0
Multon & Wallis	1,108 0 0	H. L. Holloway	1,000 0 0
Young & Lonsdale	1,089 0 0	Balaam Bros.	990 0 0
H. Brown	1,067 0 0	Sandford	883 7 0
J. Baxter	1,040 0 0		

LONDON.—For the erection of premises, No. 10, Powis-street, Woolwich, for Mr. Court. Mr. H. H. Church, architect, William-street, Woolwich. Quantities by Mr. W. Whincop, 44, Norcott-road, Stoke Newington, N.:—

Bishop & Webb	£1,070 0	Chapman	£927 0
Young & Lonsdale	995 0	H. L. Holloway	910 0
Multon & Wallis	992 0	Balaam Bros.	894 0
H. Brown	972 0	Sandford	781 15
J. Baxter	945 0		

LONDON.—For alterations, sanitary work, and decorating, at No. 29, Douglas-road, Canonbury, N. Mr. A. Bradley Rooke, architect:—

Greenwood	£297 15 6	E. Houghton & Son	£249 10 0
Edwards & Medway	251 11 0	Mander*	197 16 0

* Accepted.

LONDON.—For alterations and repairs at No. 8, Northwick-terrace, Maida Vale, W., for Mr. J. T. Hooper. Mr. H. Herbt. Robinson, surveyor, 8, Oxford-mansion, W.:—

A. A. Webber	£480 0	G. Piercy & Co.	£298 18
Clarke & Mannooch	445 0	Martin Gloyne	263 10

LONDON.—For the supply of 105,000 creosoted deal blocks, for woodpaving for the Fulham Vestry, to be delivered in the King's-road, Fulham.—Mr. James P. Norrington, A.M.Inst.C.E., Town Hall, Walham Green, S.W.:—

Gabriel & Son	£8 5 8	Improved Woodpaving Co.	6 15 0
Acme Wood Flooring Company	7 5 0	T. B. Lee & Sons*	6 5 0
Burt, Boulton, & Haywood	7 2 9		

* For blocks already in stock. Tenders referred to Committee. The prices are at per 1,000.

LOUGHTON.—For making up private roads, for the Epping Rural Sanitary Authority. Mr. Egan, surveyor:—

	Lower Park-road.	Alpher's-road.	Total.
Marshall	£263 0 0	£403 0 0	£666 0 0
French*	225 0 0	307 0 0	532 0 0
Porter	195 0 0	287 10 0	482 10 0

* Accepted.

LOUTH (Lincs.).—For the construction of a reservoir and incidental works, Hubbard's Hills, for the Water Company. Mr. Charles T. Dennis, surveyor, Louth:—

George Dennis	£228 15 0	C. A. Walker	£193 9 0
George Harness	228 12 6	John Cook	181 10 0
Alfred Fixter	226 18 9	J. Harrison & Sons	148 10 0
J. Perkins	225 10 0	W. Nicholson, Louth*	135 0 0

*Accepted.

MAIDENHEAD.—For the enlargement of vagrant wards at the workhouse, for the Cookham Union Guardians. Mr. C. A. Vardy, architect, Queen-street Chambers, Maidenhead. Quantities by the architect:—

Silver & Sons	£1,448	W. & T. Parth	£1,275
Wm. Creed	1,339	West Bros., Albert-street, Maidenhead*	1,158
Thos. Martin	1,330		

* Accepted.

NOTTINGHAM.—For the erection of school buildings, Albert-street, Highbury Vale, Bulwell, for the School Board. Mr. A. H. Goodall, architect, Market-street, Nottingham. Quantities by architect:—

S. Ingham & Sons	£5,110 0 0	J. H. Vickers	4,399 0 0
T. McCulloch	4,925 0 0	J. White	4,399 0 0
J. J. Adams	4,753 12 0	Gilbert & Gabbitass	4,395 0 0
G. Hopewell & Son	4,662 0 0	Appleby & Lambert	4,394 0 0
R. Tiley	4,648 5 0	J. T. Cuthbert	4,380 18 0
Dennett & Williamson	4,620 0 0	J. Mersson	4,365 0 0
W. Donnelly	4,580 0 0	W. Maule	4,364 0 0
J. Hutchinson	4,560 0 0	T. Barlow	4,340 0 0
J. H. Vickers	4,540 0 0	J. Oscroft	4,335 0 0
Levi Green	4,490 0 0	B. Keeling	4,330 0 0
J. F. Price	4,470 17 6	W. Pinkett	4,295 0 0
J. Cooper	4,430 0 0	G. A. Pillatt, Nottingham*	4,220 0 0
J. Hodson & Son	4,419 0 0	*Accepted.	

PONTYPRIDD.—For the erection of stables, &c., "Butcher's Arms" Hotel. Mr. F. Gibson, architect, Market-square, Pontypridd:—

Thomas Evans	£1,090 0 0	E. Fryatt Richards & Co.	£918 16 0
Griffith & Co.	1,049 11 0	J. C. Richards, Hereford (amended tender accepted)	850 0 0
D. C. Jones & Co.	1,020 0 0		
Alfred Richards	962 18 0		
Williams & James	948 15 0		

ROTHERHAM.—For the erection of twenty-nine dwelling-houses, St. John's-road, Eastwood, for Mr. Wm. Clarke. Mr. Edwd. Hutchinson, surveyor, 18, Howard-street, Rotherham. Quantities by surveyor:—

Isaac Crooks	£4,103 10 0	Walter Bell	£3,780 0 0
Hy. Scrivens	4,090 0 0	Thos. Green	3,753 0 0
Robt. Snell	4,060 0 0	Richd. Snell	3,680 0 0
W. H. Treasheam	3,985 18 6	A. T. Ripley	3,595 0 0
Chas. Green	3,980 0 0	Wm. Thornton & Son, Rotherham*	3,557 0 0
Benj. Bool	3,980 0 0	*Accepted.	
Wm. Marshall	3,920 18 8		

[Architect's estimate, £3,650.]

SOUTHPORT.—For the supply of 300 cast-iron bend-pipes and swan-necks, for the Corporation. Mr. W. Crabtree, Borough Surveyor, Southport:—

Thos. E. Kershaw	£31 5 0	Saml. Halton	£17 1 8
Thos. W. Robinson	20 0 0	Callendar Iron Co.	15 16 8
H. Williamson & Co.	19 11 8	Seddon & Blundell	14 9 6
John Ball	19 7 0	H. J. Skelton & Co.	14 3 4
Griffiths & Co.	18 6 8	Newton Chambers & Co., Thorncliffe Iron-works, Sheffield*	14 3 4½
G. Smith & Co.	18 2 6		
Pryke & Palmer	17 5 10	*Accepted.	

STEVENTON (Hants).—For the erection of school buildings and teacher's residence, for the Steventon School Board. Mr. J. Gibson, architect, New-street, Basingstoke:—

F. G. Weeks	£1,470 0 0	Goodall	1,260 8 8
G. Simonds	1,385 0 0	Harris	1,208 5 0
R. Tarrant	1,320 0 0	Annett & Son	1,195 0 0
F. Beale	1,290 0 0	Thumwood	1,151 17 0
Kellow & Smith	1,285 0 0	Musselwhite & Son	1,129 0 0
J. A. Sims	1,260 0 0	Wyett, Oakley*	1,050 0 0

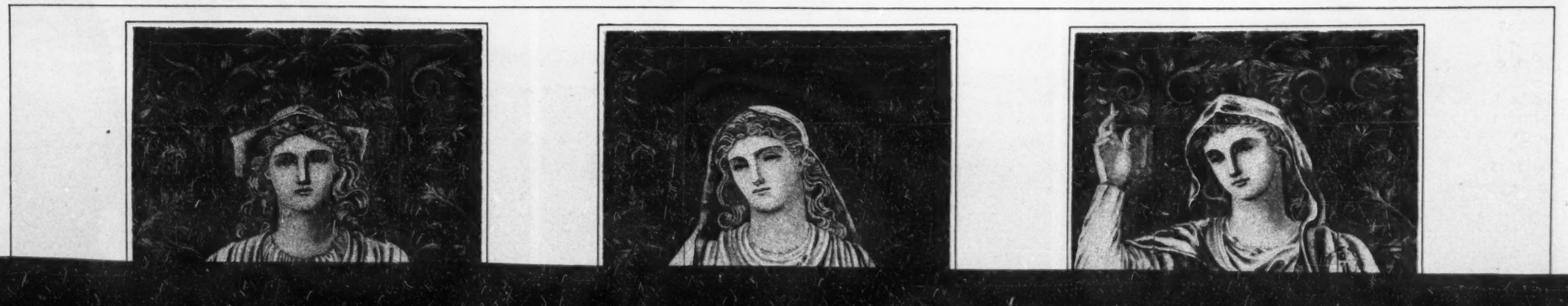
*Accepted.

INX PHOTO SPRAGUE & Co 4 & 5 EAST HARDING STREET FETTER LANE E.C.

"REMOVAL OF THE BODY OF ST. SEBASTIAN FROM THE TREE AFTER THE FIRST MARTYRDOM."

Mr. F. Thomas, Sculptor.

[*Sculpture Group submitted in Competition for the Royal Academy Gold Medal.*]



STOCKPORT.—For excavating, sewering, forming, and flagging, No. 1 Passage, Dale-street, and six other passages and streets, for the Corporation. Mr. Jno. Atkinson, Borough Surveyor, St. Petersgate, Stockport :—

Worthington & Pownall	£375	6	1	W. Broadhurst & Co.	£355 2 1
William Walker	373	18	10	P. D. & S. D. Hayes, Stockport*	348 5 10

* Accepted.

STOKE-ON-TRENT.—For additions to schools, Foxt; and alterations to schools, Ipstones and Berkhamstych, for the committee. Mr. G. Horseley, architect, London :—

For Foxt Schools.

J. Clowes & Barks	£187 10 0
W. Smith	175 0 0
G. Goldstraw, Ipstones, Stoke-on-Trent*	257 15 3

Ipstones and Berkhamstych.

G. Goldstraw	£156 17 2
Clowes & Barks, Ipstones, Stoke-on-Trent*	139 10 0

* Accepted.

SWANSEA.—For the formation and sewering of a street and back lane, on the Mirador field, Uplands, for Mr. David Trevellian Jenkin. Messrs. John M. Leeder & Son, architects :—

J. & F. Weaver	£453	10	0
P. Jones & Son	430	0	0
John Williams	458	0	0
T. Jones Davis	400	0	0
Wm. James	£354	7	6
C. Hannay & Son	335	5	0
John Grove, St. Thomas, Swansea*	310	0	0

* Provisionally accepted.

WOKING.—For converting two old cottages into a coffee tavern, at Woking Village, for Mr. H. J. Hill. Mr. Wm. G. Jones, architect, 3, Broadway, Woking :—

J. Whitburn	£360 0 0
Ingram & Son, Woking (accepted)	342 0 0

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"REMOVAL OF THE BODY OF ST. SEBASTIAN FROM THE TREE AFTER THE FIRST MARTYRDOM."

MR. F. THOMAS, SCULPTOR.

[*Sculpture Group submitted in Competition for the Royal Academy Gold Medal.*]

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A DISTRICT COUNCIL HALL, BERLIN.—Messrs. Ende & Boeckmann, Architects.

FRONT TO MAIN STREET.

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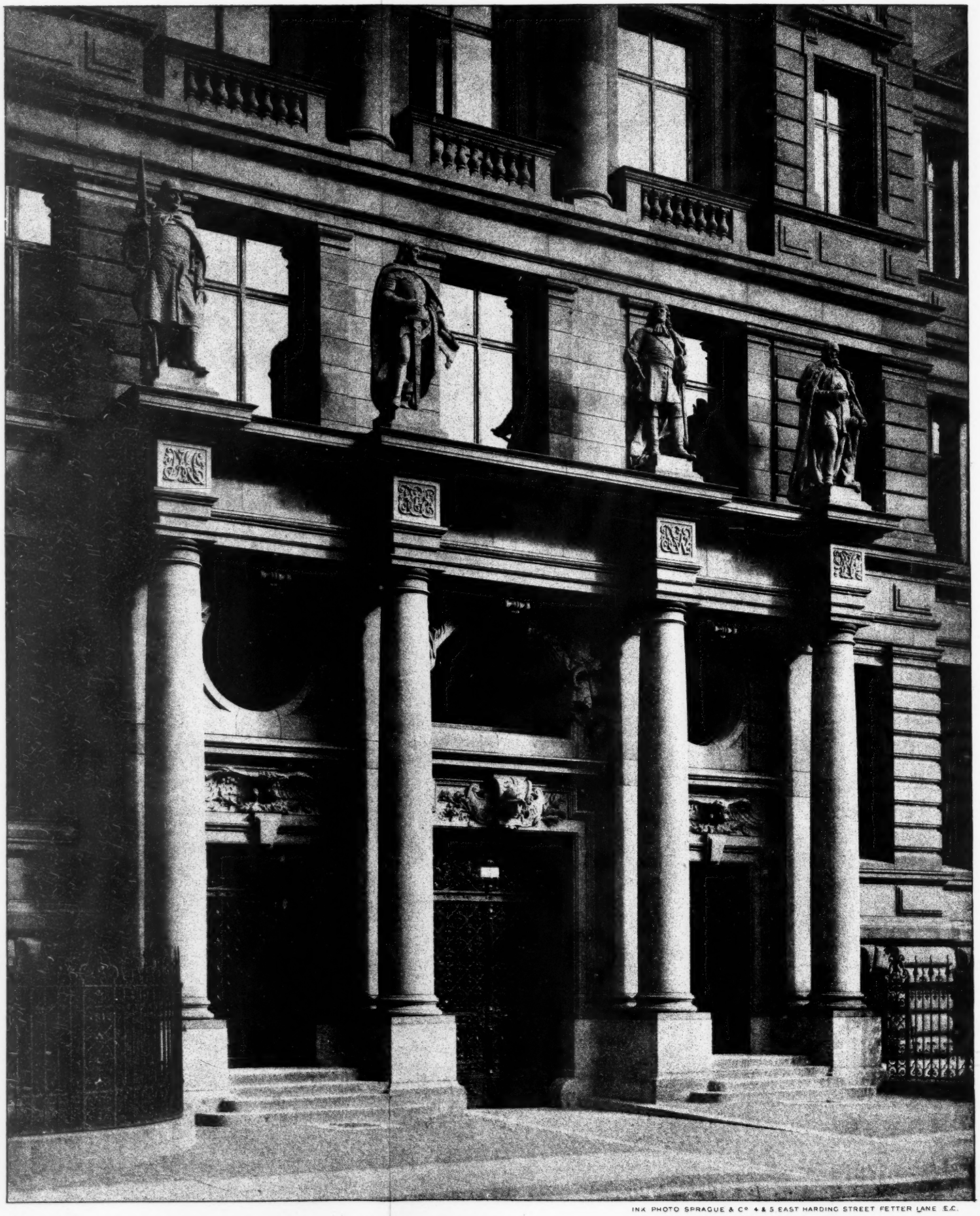

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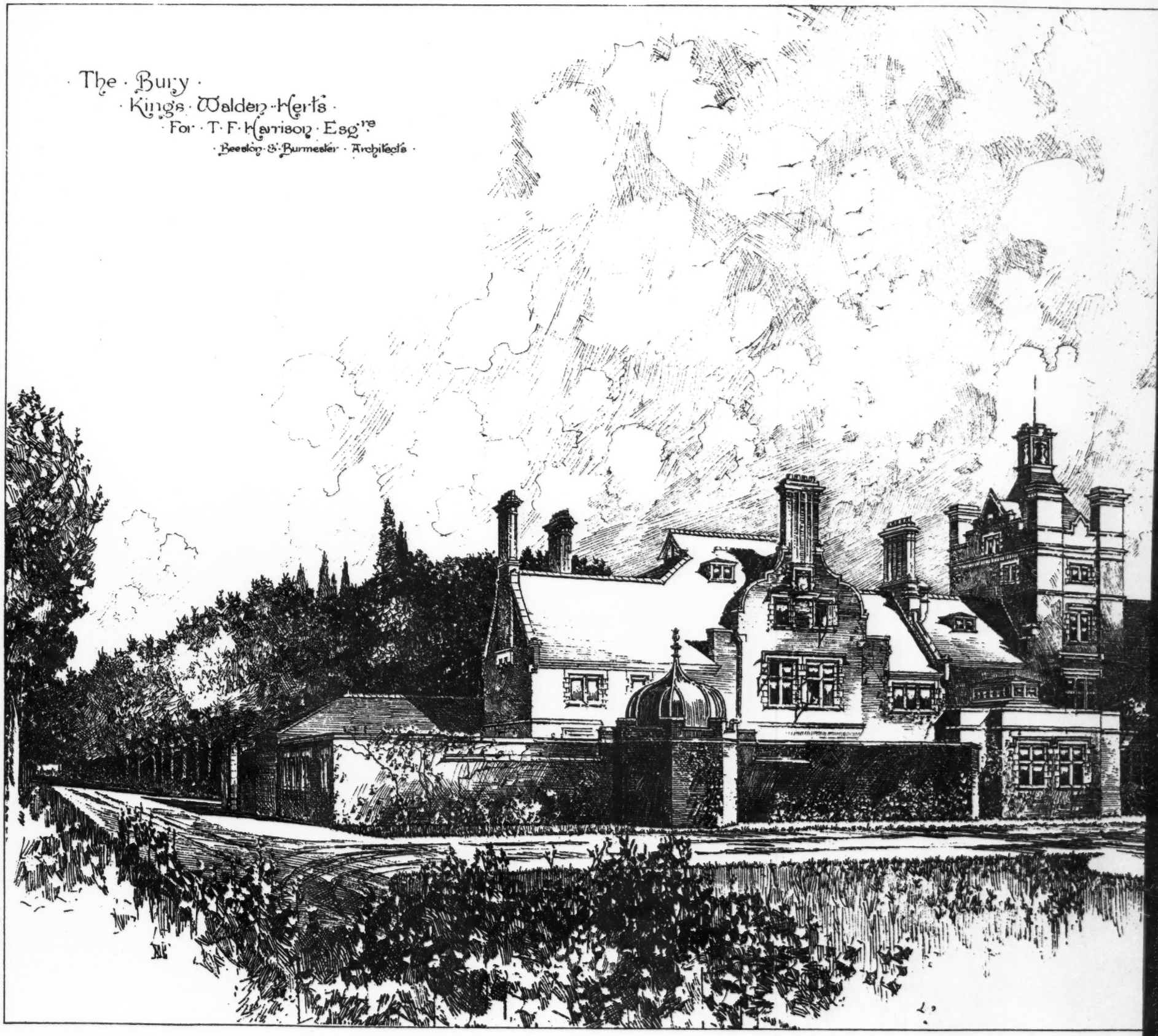
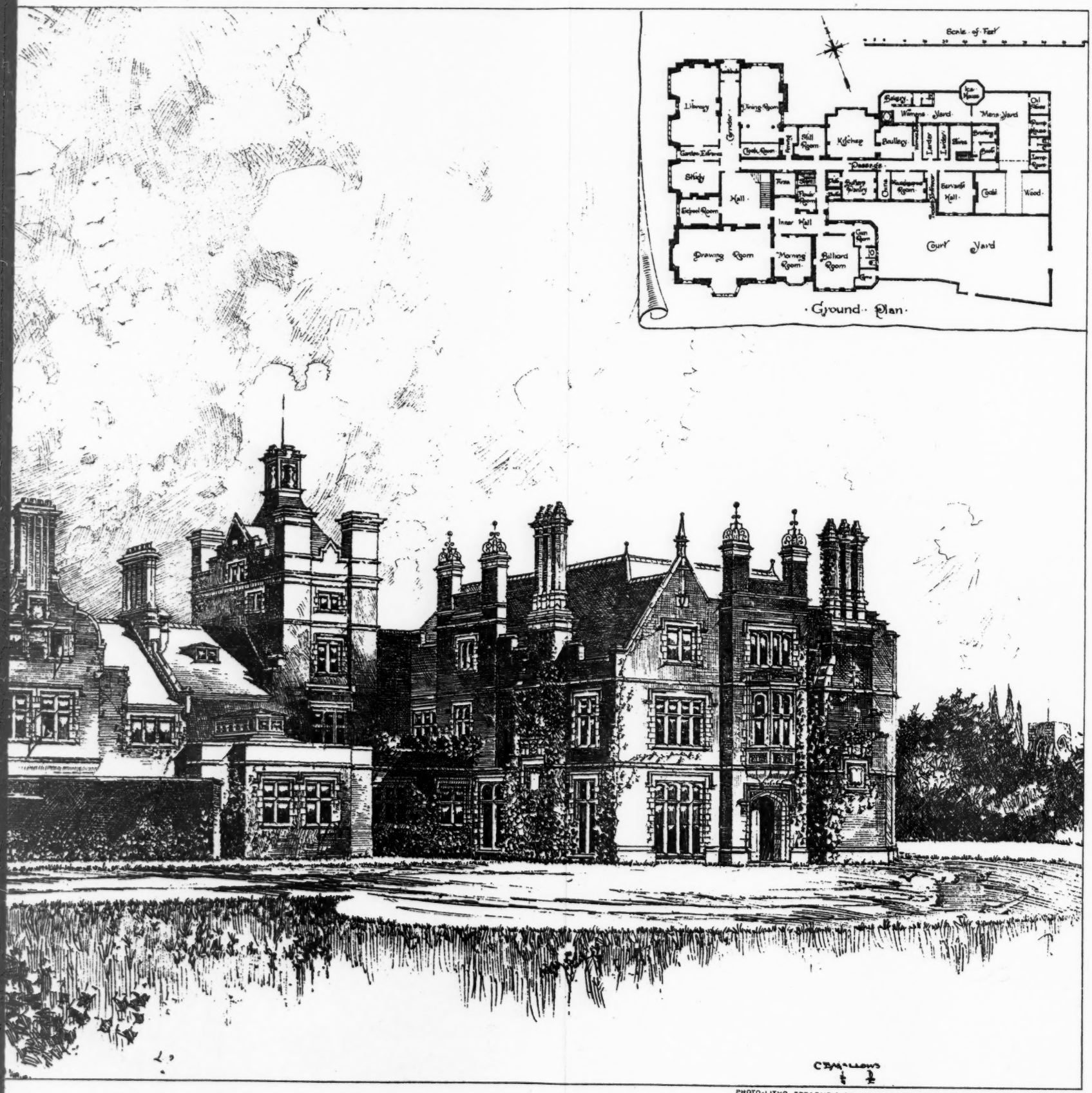
A DISTRICT COUNCIL HALL, BERLIN.—MESSRS. ENDE & BOECKMANN, ARCHITECTS.
CENTRAL ENTRANCE PORTICO.

The Bury
Kings Walden Herts
For T. F. Harrison Esq.re
Beeston & Burmester Architects



Royal Academy Exhibition, 1893.



C. E. Mallows

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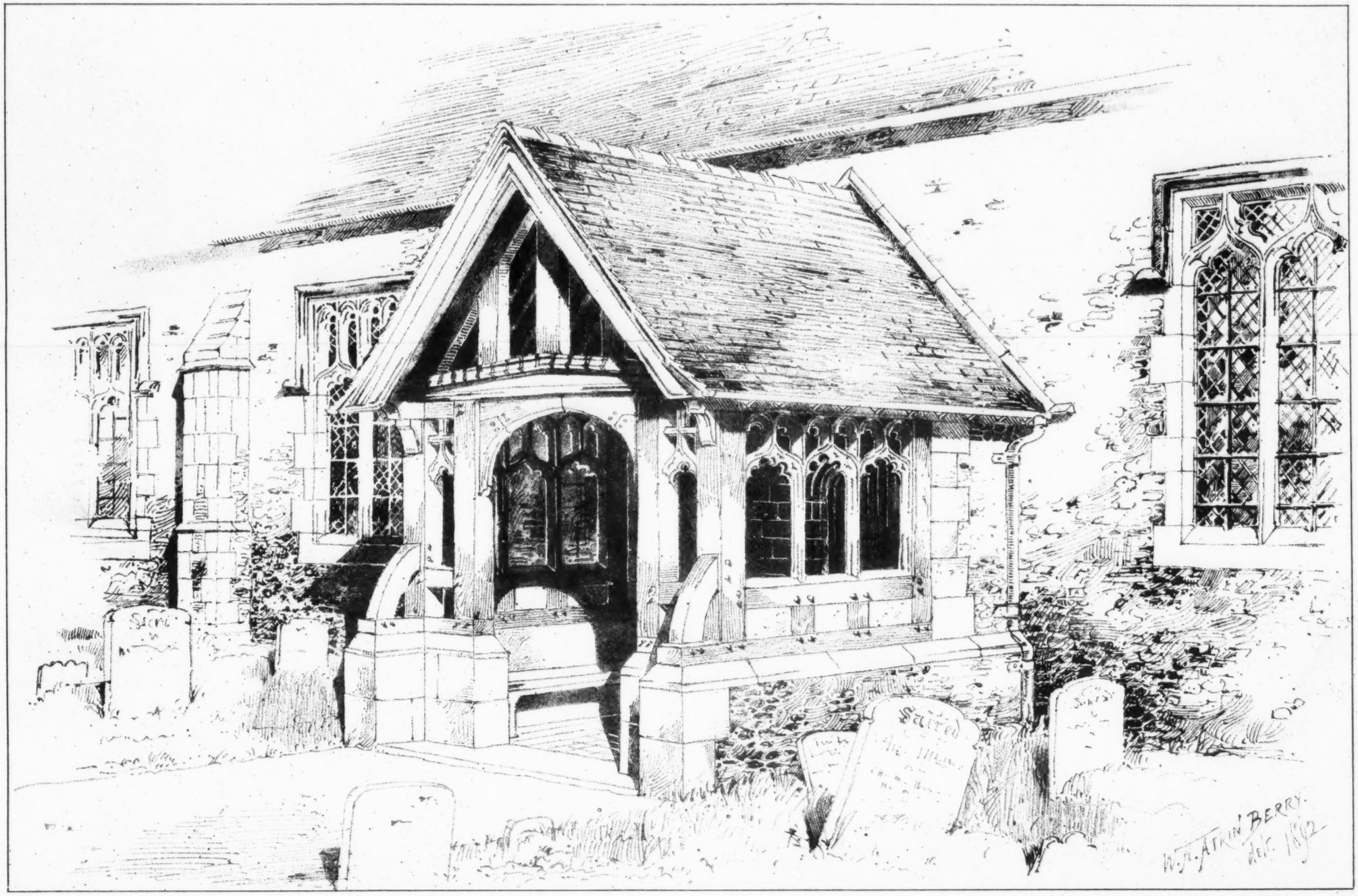

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Royal Academy Exhibition, 1893.

NEW PORCH, HIGHAM CHURCH, NEAR COLCHESTER.—Mr. W. H. A. Berry, A.R.I.B.A., Architect.